

CHESHIAHUD LAKE UNION LOOP MASTER PLAN

SEPA Environmental Checklist

Prepared for:

January 2009

Seattle Parks and Recreation &
MacLeod Reckord



TABLE OF CONTENTS

TABLE OF CONTENTS	I
ENVIRONMENTAL CHECKLIST	1
A. BACKGROUND	1
B. ENVIRONMENTAL ELEMENTS	7
1. EARTH	7
2. AIR	8
3. WATER	9
4. PLANTS	11
5. ANIMALS	12
6. ENERGY AND NATURAL RESOURCES	13
7. ENVIRONMENTAL HEALTH	14
8. LAND AND SHORELINE USE	15
9. HOUSING	18
10. AESTHETICS	18
11. LIGHT AND GLARE	19
12. RECREATION	19
13. HISTORIC AND CULTURAL PRESERVATION	20
14. TRANSPORTATION	21
15. PUBLIC SERVICES	23
16. UTILITIES	23
C. SIGNATURE	25
D. SUPPLEMENTAL SHEET FOR NON-PROJECT ACTIONS	27
REFERENCES	31

ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. Name of the proposed project:

Cheshiahud Lake Union Loop Master Plan

2. Name of Applicant:

Seattle Parks and Recreation

3. Address and telephone number of applicant and contact person:

City of Seattle, Seattle Parks & Recreation
800 Maynard Avenue South, 3rd Floor
Seattle, WA 98134

Attn: David Graves, AICP, Senior Planner
Phone: 206-684-7048

SEPA Checklist prepared by:
ESA Adolfson
5309 Shilshole Avenue NW, Suite 200
Seattle, WA 98107

Attn: Lloyd Skinner, Regional Director
Phone: 206-789-9658

4. Date checklist prepared:

January 7, 2009

5. Agency requesting checklist:

City of Seattle

6. Proposed timing or schedule (including phasing, if applicable):

Development of the Cheshiahud Lake Union Loop (CLUL) Master Plan is anticipated to be completed in early 2009. The master plan will address challenges and potential solutions for several key areas around the loop corridor to enhance pedestrian and bicycle safety.

7. Plans for future additions, expansion, or further activity related to or connected with this proposal:

Adoption of the master plan is considered a non-project action for purposes of review and approval under the City’s SEPA procedures (SMC 25.05). The CLUL Master Plan identifies several locations where future improvements will be required to complete the loop. Individual project specific actions may require separate environmental review and permitting for construction.

8. Environmental information that has been prepared, or will be prepared, directly related to this project:

A traffic study was prepared to measure traffic speeds and volumes and analyze cut-through traffic along the Fairview Avenue East corridor (TENW, 2008). No other specific information has been prepared as part of the master planning process to date. Implementation of the CLUL Master Plan will require improvements at several locations. Design, permitting, and construction of individual projects in the future will likely require preparation of environmental information.

9. Applications that are pending for governmental approvals or other proposals directly affecting the property covered by the proposal:

No other pending approvals or proposals will directly affect development of the CLUL Master Plan.

10. List of governmental approvals or permits that will be needed for the proposal:

The final CLUL Master Plan will be implemented by the Seattle Department of Transportation and Seattle Parks & Recreation and will require a threshold determination under SEPA for Non-Project Actions. No other permits or approvals are required for this phase of the proposal. Permits or approvals that may be required for specific improvements implementing the master plan include:

- Shoreline Substantial Development Permit (Seattle Department of Planning and Development) for certain types of work within 200-feet of the Lake Union shoreline;
- Street Use Permit (Seattle Department of Transportation) for use of street right of way for resurfacing, or potential traffic detours during construction;
- Critical Area Review (Seattle Department of Planning and Development) for project work with the potential to affect designated Environmentally Critical Areas per SMC 25.09;
- Hydraulic Project Approval (Washington Department of Fish and Wildlife) for in-water work in Lake Union (e.g., ferry landings, pilings for cantilevered walkways, etc.);

- Section 10 River and Harbors Act (U.S. Army Corps of Engineers) for work/new structure in waters of the US (including wetlands);
- Section 404 Clean Water Act (U.S. Army Corps of Engineers) for fill placed in waters of the US (including wetlands); and
- Section 401 Water Quality Certification (Washington Department of Ecology), triggered by certain types of projects that need a Section 404 permit.

11. Brief, complete description of the proposal, including the proposed uses and the size of the project and site:

The City of Seattle Parks and Recreation Department has initiated work to design and develop a six-mile pedestrian loop network around Lake Union, in coordination with the Seattle Parks Foundation. Named the “Cheshiahud Lake Union Loop” (CLUL), this loop will provide a continuous network of open spaces and parks around the lake, enhancing access from adjacent neighborhoods, downtown, and the University of Washington. Cheshiahud was a renowned leader of a Duwamish village located on Lake Union. His name is pronounced “Chesh-EE-a-hood.” The loop corridor will provide pedestrian and bicycle access to the lake by connecting existing lakefront parks, such as Gas Works and Lake Union Parks, with over 35 pocket parks and street ends. The loop corridor utilizes existing public right of way and commonly used bicycling routes, including segments of the Burke Gilman Trail, Westlake Avenue, Fairview Avenues (North and East), and existing trails in Gas Works and Lake Union Parks.

The loop will use a variety of sign types for wayfinding and public education. Landmark, bollard, and interpretive signage will be combined to provide a cohesive and integrated wayfinding system along the loop, improving public access and safety and celebrating the rich and diverse history of Lake Union.

The CLUL Master Plan does not envision the need for right of way acquisition. The loop corridor will use existing public right of way and public parks.

12. Location of the proposal, including street address, if any, and section, township, and range; legal description; site plan; vicinity map; and topographical map, if reasonably available:

The proposal is located on existing right of way surrounding Lake Union (see Figure 1). Moving clock-wise around the lake from Lake Union Park, the loop corridor utilizes the following streets and bridges, located in Township 25 North, Range 4 East, Sections 17, 18, 19, 20, 29, and 30:

- Westlake Avenue North;
- Fremont Bridge;

- North 34th Street/Burke Gilman Trail;
- North/ Northeast Northlake Way;
- Latona Avenue Northeast;
- Northeast 40th Street;
- University Bridge;
- Fuhrman Avenue East;
- Fairview Avenue East;
- East Hamlin Street;
- Yale Terrace East;
- East Edgar Street;
- Yale Avenue East;
- East Roanoke Street;
- Fairview Avenue East/North; and
- Valley Street.

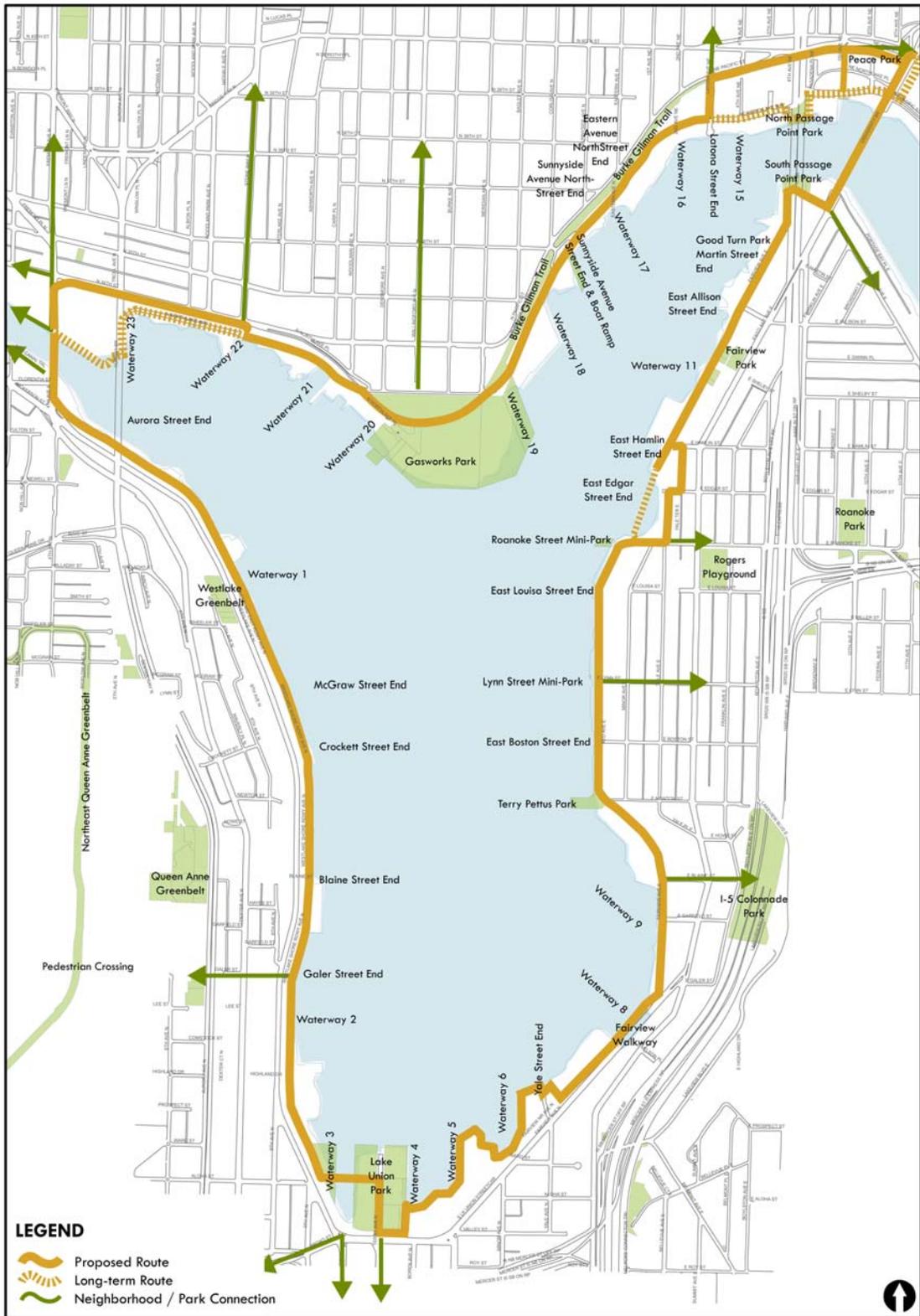


Figure 1. Cheshiahud Lake Union Loop (Source: MacLeod Reckord)

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. **General description of the site (underline):**

Flat, rolling, hilly, steep slopes, mountainous, other

b. **What is the steepest slope on the site (approximate percent slope)?**

The loop corridor is generally flat along the lake's shoreline. Connections to adjacent upland areas and streets are steep in places (between East Lynn Street and East Louisa Street moving east toward Eastlake for example). Improved segments of the loop would be compliant with ADA design standards for maximum gradient (1:20 or 5 percent slope).

c. **What general types of soils are found on the site (for example clay, sand, gravel, peat, muck)? Specify the classification of agricultural soils and note any prime farmland.**

Comprehensive soil survey mapping by the USDA Natural Resources Conservation Service (NRCS) does not include the urban Seattle area. No prime farmland is in the proposal area. Generalized geologic mapping by Galster and Laprade (1991) indicates most of the land bordering Lake Union is Vashon till, with areas of Lawton clay. The history of maritime industrial development along the lakeshore, coupled with roads, bridges, and other infrastructure, suggests that the majority of soils near the surface along the loop corridor has been modified with fill.

d. **Are there any surface indications or a history of unstable soils in the immediate vicinity? If so, describe.**

None are known.

e. **Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate the source of the fill.**

None are known. Specific improvements needed to implement the CLUL Master Plan may require filling or grading.

f. Could erosion occur as a result of clearing, construction, or use?

Erosion potential will be evaluated on a project level basis as CLUL improvements are implemented.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example buildings or asphalt)?

The CLUL Master Plan envisions using existing developed right of way for the majority of the loop corridor. Improvements may require resurfacing existing pavement or gravel areas along the corridor and could include new impervious surface at specific locations. Quantities have not been estimated during development of the master plan.

h. Describe the proposed measures to reduce or control erosion, or other impacts to the earth, if any.

Does not apply. Implementation of the master plan will involve construction of specific improvements. Construction of individual project elements will provide erosion and sediment control consistent with Seattle and Washington State regulations where applicable.

2. Air

a. What types of emissions to the air would result from the proposal (e.g. dust, automobile, odors, industrial, wood smoke, greenhouse gas) during construction and when the project is completed? If any, generally describe and give approximate quantities, if known.

No emissions would result from the master plan itself. Construction of improvements to implement the master plan at specific locations could involve use of heavy machinery.

b. Are there any off-site sources of emissions or odors that may affect your proposal? If so, generally describe.

None are known.

c. Describe proposed measures to reduce or control emissions or other impacts to air, if any.

Does not apply directly. By improving the safety and accessibility of the loop corridor to pedestrians and bicyclists, including connections to downtown and the University of Washington, commuters may choose

non-motorized options to travel through the Lake Union area. This could reduce automobile emissions overall and represent an indirect benefit of the proposal for air quality.

3. Water

a. Surface:

- 1. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, and wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

The loop corridor generally follows the perimeter of Lake Union, which is a freshwater lake that is connected to both Lake Washington (via Portage Bay and the Washington Ship Canal) and Puget Sound (via Salmon Bay and the Chittenden Locks).

- 2. Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

Does not apply directly. Implementation of the master plan would include improvements within existing right of way and parks. Some improvements may require work in, adjacent to, or over Lake Union. For example, the master plan identifies potential means of crossing Mallard Cove within the submerged Fairview Avenue East right of way via a small cable ferry or a boardwalk/bridge structure. If any such improvement were implemented, it would require consultation with a variety of Federal and State agencies to address issues including navigation and impacts to habitat and/or endangered species. Specific project improvements would undergo separate design, environmental review and permitting following adoption of the master plan.

- 3. Estimate the amount of fill and dredge material that could be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill materials.**

Some CLUL improvements may require fill or dredge activities but will be evaluated on a project level basis once the type and scope of the improvements are known.

4. **Will the proposal require surface water withdrawals or diversion? Give general description, purpose, and approximate quantities, if known.**

No.

5. **Does the proposal lie within a 100-year flood plain? If so, note location on the site plan.**

No. Lake Union levels are controlled by the Chittenden Locks, between 20- and 22-feet in elevation (Corps of Engineers datum).

6. **Does the proposal involve discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

No.

b. Ground

1. **Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.**

No.

2. **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any. Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) is expected to serve.**

Does not apply.

c. Water Runoff (including storm water)

1. **Describe the source of runoff (including storm water) and method of collection and disposal, if any (including quantities if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

Does not apply directly. Stormwater runoff from the loop corridor ultimately flows to Lake Union. The master plan envisions opportunities for improvements to existing stormwater outfalls entering Lake Union. There are 24 outfalls that intersect the Cheshiahud Loop corridor. The master plan identifies the potential

to improve stormwater outfalls through daylighting and installation of natural drainage swales. Such designs would improve stormwater conveyance functions and water quality entering the lake by dissipating energy, uptake by plants, and groundwater infiltration. The master plan notes that this approach was developed for the Waterway 18 renovation, which is one of the waterways along the loop.

2. Could waste materials enter ground or surface waters? If so, generally describe.

The potential for waste entering waters will be evaluated on a project level as CLUL improvements are implemented.

d. Describe proposed measures to reduce or control surface, ground, and runoff water impacts, if any.

Stormwater improvements envisioned by the Master Plan would constitute measures to reduce and control impacts from runoff.

4. Plants

a. Types of vegetation found on-site:

A variety of native, ornamental, and invasive plant species are found along the urbanized loop corridor as natural open spaces and landscaped properties adjacent to the right of way. Vegetation includes trees, shrubs, and manicured grass. A specific inventory has not been completed for the proposal.

Deciduous trees:

Evergreen trees:

Shrubs:

Grass:

Pasture:

Wet Soil Plants:

Water Plants:

b. What kind and amount of vegetation will be removed or altered?

Does not apply directly. Implementation of the master plan may involve improvements at specific locations that would require removal of vegetation. The potential for removal of invasive species and replanting with native species would be explored as part of the design process for specific improvements.

c. List threatened or endangered species or critical habitat known to be on or near the site.

No threatened or endangered plant species are known to occur along the corridor. None are identified by the Washington State Natural Heritage Program (WDNR, 2008).

d. Describe proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on-site.

Does not apply directly (see 4.b. above).

5. Animals

a. Underline any birds and animals which have been observed on or near the site or are known to be on or near the site:

A variety of fish and wildlife species use Lake Union and its surrounding urban environment. A specific inventory has not been completed for the project.

Fish:

Amphibians:

Reptiles:

Birds:

Mammals:

b. List any threatened or endangered species or critical habitat near the site.

Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species database indicates that the following fish species are present in Lake Union or migrate through Lake Union: resident coastal cutthroat,

Chinook salmon, coho, bull trout, sockeye, and steelhead trout (WDFW, 2008).

Lake Union may contain federally listed Bull trout, Chinook salmon and Steelhead and has been federally designated as critical habitat for the following species listed under the Endangered Species Act: Puget Sound Chinook Salmon ESU; and Bull Trout (Federal Register Volume 70, Nos. 170 and 185, 2005).

c. Is the site part of a migratory route? If so, explain.

Lake Union is a migratory route for anadromous fish species moving between Puget Sound and freshwater in the Cedar Sammamish / Lake Washington watershed (see 5.b. above). The corridor is also located in the Pacific Flyway, a flight corridor for migrating waterfowl and other avian fauna. The Pacific Flyway extends from Alaska to South America.

d. Proposed measures to preserve or enhance wildlife, if any.

Enhancement measures will be evaluated at the project level basis as the CLUL Master Plan is implemented, specifically where any in-water or nearshore work will be done.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply directly. Specific improvements identified in the master plan (such as powering winches for a cable ferry or operating a lift at the Fremont Bridge) may require DC electrical power or solar power if feasible.

b. Would the project affect the potential use of solar energy by adjacent properties? If so, explain.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

Does not apply directly. Use of solar power would be explored to meet energy needs for specific improvements implementing the master plan.

7. Environmental Health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spills, or hazardous waste that could occur as a result of this proposal? If so, describe.**

Does not apply directly. Due to the history of industrial uses on the shoreline and surrounding Lake Union, *e.g.* the manufactured gas plant at what is now Gas Works Park, there is potential for encountering soils or lake sediments contaminated with metals and/or chemicals if improvements at specific locations require excavation, pilings, or other subsurface disturbance (Cabbage, 1992; Jack, 2003; Landolt Busch and Associates, 1991).

- 1. Describe special emergency services that might be required.**

Does not apply.

- 2. Describe proposed measures to reduce or control environmental health hazards.**

Does not apply directly. Improvements at specific locations implementing the master plan may warrant preliminary site investigations such as a Phase I Environmental Site Assessment. Depending on the site, further investigation through soil/sediment sampling and testing and/or a Phase II Environmental Site Assessment may be necessary prior to undertaking any construction activity to determine appropriate measures for handling or removing contaminated materials.

b. Noise

- 1. What types of noise exist in the area which may affect your project (for example: traffic, equipment operation, other)?**

None. The CLUL corridor is located primarily along urban roadways and within active parks.

2. What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)?

Does not apply directly. Construction of specific improvements to implement the master plan could involve temporary short-term increases in noise associated with construction equipment and/or heavy trucks. Construction would typically be completed during daytime hours (7 a.m. to 10 p.m. weekdays and 9 a.m. to 10 p.m. weekends) and within City of Seattle construction noise limits (Seattle Municipal Code 25.08.425). Use of the CLUL would be limited to pedestrians, bicyclists, and other non-motorized forms of transportation.

3. Describe proposed measures to reduce or control noise impacts, if any.

Does not apply.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

The CLUL corridor is located within parks and public right of way currently used as streets, pathways, and street ends fronting Lake Union. The corridor passes through a variety of urban land uses, including commercial retail, office space, industrial and commercial waterfront, University of Washington, and waterfront recreational properties. Residential uses (single-family, low-rise multi-family, and houseboats) are concentrated in the Eastlake neighborhood.

b. Has the site been used for agriculture? If so, describe.

No.

c. Describe any structures on the site.

Does not apply.

d. Will any structures be demolished? If so, what?

Does not apply.

e. What is the current zoning classification of the site?

Based on the City's Generalized Zoning map dated November 3, 2008, classifications along the corridor include Commercial, Industrial General

1, Single Family 5000, Low-rise, Major Institution (University of Washington), Industrial Commercial; and Industrial Buffer (City of Seattle, 2008a).

f. What is the current comprehensive plan designation of the site?

Based on the City's Comprehensive Plan Future Land Use Map, designations along the corridor include City-Owned Open Space, Commercial/Mixed Use Areas, Industrial Areas, Multi-Family Residential Areas, Major Institutions, and Single Family Residential Areas (City of Seattle, 2008b). The corridor passes through the following designated urban centers, hubs, or residential urban villages: South Lake Union Urban Center; Eastlake Residential Urban Village; University Campus Urban Center Village; and the Fremont Hub Urban Village.

g. If applicable, what is the current shoreline master program designation of the site?

Based on the City's zoning maps (December 2008), the CLUL corridor passes through the following designated shoreline environments, as established by SMC 23.60.220:

- Urban Stable (US);
- Conservancy Waterway (CW);
- Conservancy Management (CM);
- Urban Maritime (UM);
- Urban Residential (UR); and
- Urban General (UG).

The City is in the process of updating its Shoreline Master Program (SMP). All jurisdictions in King County are required to update their SMPs, and it is anticipated that Seattle's update will be completed in 2010. The purpose and function of the proposed CLUL network is consistent with and supports major policy objectives of the SMP. In particular, policies supported by the proposal include improving public access to the shoreline for recreation and enjoyment, and environmental protection and restoration of shoreline ecological functions (through stormwater management improvements, plantings, and other improvements envisioned in the master plan).

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

City of Seattle Zoning maps display Environmentally Critical Areas (ECA; those areas designated and regulated under SMC 25.09) along much of the CLUL corridor. Lake Union, being a Type 1 water (WAC 222-16-031) providing a migration corridor for listed fish species, has a shoreline buffer of 100 feet from the ordinary high water mark (SMC 25.09.200 B.). Shoreline uses allowed under the SMP (SMC 23.60) are allowed in the buffer, provided they meet certain conditions to avoid ecological impacts and/or provide mitigation for unavoidable impacts. The majority of areas shown as ECAs along the CLUL corridor are associated with a shoreline habitat buffer. The 1992 ECA map folio indicates the following ECAs along the corridor as well:

- Liquefaction-prone areas (surrounding the south end of Lake Union; north of Mallard Cove; near the south ends of the Aurora Avenue and University bridges); and
- Slopes of 40 percent or more (small areas adjacent to portions of the corridor) (City of Seattle, 1992).

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Describe proposed measures to avoid or reduce displacement impacts, if any.

Does not apply.

l. Describe proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

The loop around Lake Union was envisioned in the Seattle Parks Foundation 2007 report called Bands of Green. This report is a plan for the continuing development of trails, boulevards and linear parks in Seattle. The CLUL Master Plan is consistent with and supports several city-wide plans, including:

- Seattle Parks and Recreation 2006 Development Plan;
- Seattle Parks Historic Resources Plan;
- Seattle Parks Urban Wildlife and Habitat Management Plan;
- Seattle Comprehensive Plan (including policies in several elements such as Land Use, Transportation, Environment, and Neighborhood Plans); and
- Seattle Shoreline Master Program (which promotes public access and enjoyment of shorelines of the state, including Lake Union).

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

None.

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

None.

- c. Describe proposed measures to reduce or control housing impacts, if any.**

Does not apply.

10. Aesthetics

- a. What is the tallest height of any of the proposed structure(s), not including antennas? What is the principal exterior building material(s) proposed?**

Does not apply directly. Specific improvements implementing the master plan could involve construction of cantilevered pathways near or over the water in specific locations. Building materials would be determined during the design phase for those improvements.

- b. What views in the immediate vicinity would be altered or obstructed?**

None.

- c. **Describe proposed measures to reduce aesthetic impacts, if any.**

Does not apply.

11. Light and Glare

- a. **What type of light and glare will the proposal produce? What time of day would it mainly occur?**

No lighting is envisioned for the loop.

- b. **Could light or glare from the finished project be a safety hazard or interfere with views?**

No.

- c. **What existing off-site sources of light or glare may affect your proposal?**

None.

- d. **Describe the proposed measures to reduce or control light and glare impacts, if any.**

Does not apply.

12. Recreation

- a. **What designated and informal recreational opportunities are in the immediate vicinity?**

The purpose and vision of the Cheshiahud Lake Union Loop is to provide an integrated network of pedestrian and bicycle access to existing recreational, public open space, and other public access viewpoints surrounding Lake Union. There are more than 35 pocket parks, street ends, and waterways that surround the lake. Figure 1 in Section A. of this checklist shows these locations.

- b. **Would the proposed project displace any existing recreational uses? If so, describe.**

No. The proposed project would enhance access to existing recreational resources on Lake Union.

- c. **Describe proposed measures to reduce or control impacts on recreation, including recreational opportunities to be provided by the project or applicant.**

Does not apply.

13. Historic and Cultural Preservation

- a. **Are there any places or objects listed on or eligible for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.**

The following properties, buildings, or objects are on federal (National Register of Historic Places), state (Washington Heritage Register), or city (City of Seattle Landmarks List, maintained by the Landmarks Preservation Board) registers. Implementation of the CLUL Master Plan may enhance access to these landmarks, but would not otherwise adversely affect them.

Location / Object	Register Listing
Pirate (R-Class Sloop)	NRHP; WHR
M.V. Westward (Wooden Motor Vessel)	NRHP; WHR
Schooner Martha	NRHP; WHR
S.S. San Mateo	NRHP; WHR
Wawona Schooner	NRHP; WHR; Seattle Landmarks
Chickamauga Tugboat	WHR
Adventuress (Lake Union Drydock)	National Historic Landmark
Tenas Chuck Moorage Historic District	WHR
University Bridge	NRHP; WHR
Gasworks Park	WHR
Aurora Avenue Bridge	NRHP; WHR; Seattle Landmarks
Lake Washington Ship Canal (and Chittenden Locks)	NRHP; WHR
Fremont Bridge	NRHP; WHR; Seattle Landmarks
Wagner Houseboat	NRHP; WHR
M.V. Malibu	Seattle Landmarks
M.V. Thea Foss	Seattle Landmarks
Lake Union Steam Plant	Seattle Landmarks

Sources: WDAHP, 2008; City of Seattle, 2008a

- b. Generally describe any landmarks or evidence of historic, archeological, scientific, or cultural importance known to be on or next to the site.**

Designated landmarks along the CLUL corridor are described above. In addition, much of the corridor passes through an area within 200 feet of the U.S. Government Meander Line, which provides an indication of where the historic lake shoreline existed prior to fill or other alteration. If specific improvements implementing the CLUL require excavation in this area, additional literature research or archaeological site investigation may be warranted.

- c. Describe proposed measures to reduce or control impacts, if any.**

Does not apply. Part of the vision and purpose of the CLUL is to celebrate the rich and diverse history of Lake Union and educate the public through interpretive signage. The name of the loop, “Cheshiahud,” honors a Duwamish chief who led a village located on Lake Union.

14. Transportation

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on-site plans, if any.**

The majority of the CLUL corridor is located within existing street right of way, as described in Section A.12. (Background and location).

- b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?**

The CLUL corridor is served at a variety of locations by King County Metro Transit. The South Lake Union Streetcar would be accessible from stops along Fairview Avenue North and Valley Street near Lake Union Park.

- c. How many parking spaces would the completed project have? How many would the project eliminate?**

Creation of parking spaces dedicated to the CLUL is not envisioned as part of the master plan. Preservation of existing parking along the corridor for businesses and residents is a priority. Implementation of the master plan may require reconfiguring and/or restriping existing parking (conversion from parallel parking to angled, or striped spaces along public right of way, for example).

- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe.**

Implementation of the master plan may require resurfacing, restriping, or other improvements along streets and existing right of way.

- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

The project will not use water, rail, or air transportation. The South Lake Union Streetcar would be accessible from stops along Fairview Avenue North and Valley Street near Lake Union Park.

- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.**

In general, the City anticipates that the loop will attract both pedestrian and some bicycle traffic that is already on the roadway system. It is also possible that the loop will generate some new traffic for those who travel specifically to Lake Union to explore the loop. No estimates of this potential new traffic volume have been prepared at this time. Loop users would likely park cars at other park sites or along roadways to access the loop.

- g. Describe proposed measures to reduce or control transportation impacts, if any.**

A traffic study was prepared to examine issues related to traffic volumes, speeds, and cut-through traffic along the loop corridor on Fairview Avenue East (TENW, 2008). The study collected average daily traffic volumes and speeds on segments of Fairview Avenue East and surrounding streets such as East Roanoke Street and Minor Avenue East. The analysis indicates that 85 percent of the time, measured speeds in the study area are between 21 and 26 miles per hour, and there appears to be no significant speed issues along the Fairview Avenue East corridor. The directional distribution of traffic volumes in the study area indicates that north of East Lynn Street, there are not overall volumes, traffic generators, or cut-through traffic that would result in residential traffic management issues. However, south of East Lynn Street, volumes indicate a moderate to high level of cut-through traffic. This is most likely attributed to drivers avoiding congestion and/or left turn restrictions along Eastlake Avenue East north of Fairview Avenue North. Diversion of between approximately 500 and 750 average daily trips (ADT) from the Eastlake Avenue East corridor occurs in the northbound direction (TENW, 2008).

The traffic analysis concludes that since higher traffic levels mainly occur on the east side of the Fairview Avenue East corridor, crossing treatments and alignment of the loop corridor should be placed to minimize conflicts or interaction with the east side of Fairview Avenue East. The loop alignment along Fairview Avenue East is proposed for the west side of the street.

During implementation of the master plan, improvements at specific locations may require temporary detour routing of traffic. Appropriate signage would be provided.

15. Public Services

- a. **Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally explain.**

No.

- b. **Describe proposed measures to reduce or control direct impacts on public services.**

Does not apply.

16. Utilities

- a. **Underline utilities currently available at the site:**

A variety of underground and above ground utilities are available along the CLUL corridor.

- b. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

None.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 

Name (print): Lloyd Skinner, AICP

Title: Regional Director, ESA Adolfson

Date Submitted: January 7, 2009

D. SUPPLEMENTAL SHEET FOR NON-PROJECT ACTIONS

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

The proposal would not directly increase discharges to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise. Implementation of the CLUL Master Plan envisions specific improvements along portions of the corridor. Improvements to facilitate access and mobility may incorporate stormwater treatment and water quality enhancements and/or hazardous material clean up at specific locations. The existing noise environment along the corridor is typical of a diverse, dense, urban city. Since the loop would be limited to non-motorized forms of transportation, increases in noise are not anticipated. Specific improvements implementing the master plan would be subject to applicable local, State, and Federal regulatory requirements.

Proposed measures to avoid or reduce such increases are:

No specific measures are proposed as part of the master plan.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

The CLUL Master Plan will not directly affect plants, animals, or habitat. Implementation of the master plan could improve water quality and shoreline habitat at specific locations along the corridor. The master plan envisions improvements such as removal of non-native or invasive plant species with native plantings at some locations. Water quality could be improved through implementation of the drainage basin “cleansing” concept. Where stormwater outfalls intersect the loop corridor, these outfall pipes could be daylighted and redesigned as natural drainage swales or open channel outfalls. This would dissipate energy during peak flow events, allow groundwater infiltration, and reduce siltation to the lake.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

No specific measures are proposed other than those described above. Specific improvements to implement the master plan would be designed to avoid impact to plants and animals and incorporate design elements to enhance habitat wherever feasible.

3. How would the proposal be likely to deplete energy or natural resources?

The proposed CLUL master plan would not result in depletion of energy or natural resources.

Proposed measures to protect or conserve energy and natural resources are:

No specific measures are proposed.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

The proposed CLUL would not adversely affect these resources. The project seeks to enhance recreational opportunities. Specific improvements along the corridor that could involve in-water or over-water work would be designed to avoid or mitigate for unavoidable impacts to shoreline habitat.

Proposed measures to protect such resources or to avoid or reduce impacts are:

As described above, specific improvements will be designed to avoid impacts, enhance access to recreational and historic sites, and educate the public about the history of Lake Union through interpretive signage.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

The purpose and vision of the CLUL is to enhance access to existing recreational resources surrounding Lake Union. The corridor will utilize existing public right of way. No changes to existing land or shoreline use is envisioned. The master plan is compatible with and supports the City's parks and recreation plans, neighborhood plans, and the Shoreline Master Program by improving access to the Lake Union shoreline for neighborhood residents and others. See further discussion under section B. in this checklist.

Proposed measures to avoid or reduce shoreline and land use impacts are:

Impacts are not anticipated. During development of the master plan and during future design and planning phases for specific improvements, the City will work with neighborhood groups, commercial and industrial land owners, and other

stakeholders to ensure potential conflicts are avoided or resolved. Such conflicts could be related to parking and user safety.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Implementation of the proposed CLUL Master Plan would not establish new patterns of land use or increased density of existing land use patterns. As such, the proposal would not result in significant changes to or increased demand for public services or infrastructure.

Proposed measures to reduce or respond to such demand(s) are:

Since increased demands are not anticipated, no specific measures are proposed.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements of the protection of the environment.

The proposal is intended to be consistent with City policies and regulations related to protection of the environment. If specific improvements implementing the CLUL master plan are found during design to have unavoidable adverse impacts to the environment, those impacts would be mitigated consistent with all applicable environmental regulations.

REFERENCES

- City of Seattle. 1992. Environmentally Critical Areas Folio I through III. Seattle, Washington.
- City of Seattle. 2008a. Generalized Zoning Map and DPD Map Books.
- City of Seattle. 2008b. Comprehensive Plan Future Land Use Map.
- Cubbage, J. 1992. Survey of Contaminants in Sediments in Lake Union and Adjoining Waters (Salmon Bay, Lake Washington Ship Canal, and Portage Bay). August 1992. Department of Ecology Publication No. 92-e10. Olympia, Washington.
- Federal Register. 2005. Endangered and Threatened Species; Designation of Critical Habitat for 12 Evolutionarily Significant Units of West Coast Salmon and Steelhead in Washington, Oregon, and Idaho; Final Rule. Department of Commerce, National Oceanic and Atmospheric Administration. Vol. 70, No. 170. September 2, 2005.
- Federal Register. 2005. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Bull Trout; Final Rule. Department of the Interior, Fish and Wildlife Service. Vol. 70, No. 185. September 26, 2005.
- Galster and LaPrade. 1991. Geology of Seattle, Washington. Bulletin of the Association of Engineering Geologists. Vol. XXVIII, No. 3, 1991 pp. 235-302.
- Jack, R. 2003. Sediment Toxicity Near Gas Works Park, Lake Union, Seattle. April 2003. Department of Ecology Publication No. 03-03-014. Olympia, Washington.
- Landolt Busch and Associates. 1991. Lake Union Fish Histopathology Study. March 1991. Department of Ecology Publication No. 91-e33. Olympia, Washington.
- Transportation Engineering NorthWest, LLC (TENW). 2008. Memorandum to Macleod Reckord re: Cheslahud Lake Union Loop Master Plan – Speed & Cut-Through Traffic Issues along Fairview Avenue E – DRAFT.
- Washington Department of Archaeology and Historic Preservation (WDAHP). 2008. Washington Information System for Architectural and Archaeological Records Data (WISAARD). <http://www.dahp.wa.gov/pages/wisaardIntro.htm>
- Washington Department of Fish and Wildlife (WDFW). 2008. Priority Habitat and Species. Olympia, Washington.
- Washington Department of Natural Resources (WDNR). 2008. Washington State Natural Heritage Program. GIS data layer: WNHP_CURR. April 4, 2008. Olympia, Washington.

Public Involvement Narrative

Background

Earlier in 2008, the City of Seattle and the Seattle Parks Foundation embarked upon a master planning process to create a Master Plan document that will serve as a design blueprint for enhancing a multi-use loop around Lake Union, called the Cheshiahud Lake Union Loop. The Loop aims to connect neighborhoods, local resources, existing lakefront and parks. While the Loop is meant to be predominantly a pedestrian walking path, it is also a continuous network of open space, ideal for a wide variety of recreational activities and enjoyment of Lake Union.

At the geographic and historic heart of Seattle, the Loop will enhance the vitality and livability of neighborhoods surrounding the lake, the City, and the Seattle region. Parts of a lakefront trail already exist—segments of the Burke Gilman Trail, Westlake Avenue and trails within Gasworks and Lake Union Park. But as a whole, Lake Union remains inaccessible and disconnected as a resource, both for the communities that surround it and the general public.

The Master Plan is an opportunity to make improved connections between the existing, disjointed pedestrian and bicycle routes, converting them into a continuous loop circling Lake Union. The alignment of the Loop is based on the existing identified routes with public input received from public open houses, meetings of the project's citizen-based Advisory Committee, and e-mail communication from citizens.

The design team will submit a Draft Master Plan to the City in early January 2009. City staff will then review the Master Plan and release the final document in late January or early February 2009. The final Master Plan will propose solutions to specific design challenges around the loop and recommend future improvements.

Summary of Public Outreach

The community involvement process served an important role in developing the Cheshiahud Lake Union Loop Master Plan. The comments received at public meetings and by email correspondence largely reflected the guiding principles. Many of the concerns and suggestions were incorporated in the final Master Plan. The following graphic illustrates common themes reiterated by the public and explains how these issues were addressed in the final Master Plan document. This display was featured at Open House #3.



CHESHIAHUD LAKE UNION LOOP DRAFT MASTER PLAN

Key Concerns Raised by the Public and Incorporated into the Draft Master Plan:

☑ **“Respect and maintain individual neighborhood character”**

- Maintaining the character of every community along Lake Union is a cornerstone of the proposed Master Plan. Features of the Loop will vary between segments in order to best compliment surrounding neighborhoods.

☑ **“Balance public and private access”**

- The Draft Master Plan incorporates a shared use street concept that respects and maintains privacy, access and parking for local residents and creates a safe environment for pedestrians, cyclists and motorists to co-exist.

☑ **“Promote direct access and connectivity with existing routes and resources surrounding the neighborhood”**

- The proposed routing of the Loop provides a continuous route around Lake Union that connects all of the communities along the Lake for the first time.
- The proposed Loop connects with existing parks and all existing walking and cycling routes around Lake Union.

☑ **“Improve safety and mobility”**

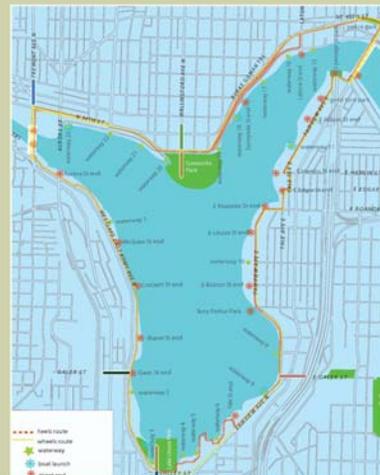
- Although the Loop is characterized by its shared use concept, the proposed route also includes designated segments that separate pedestrians, cyclists and motorists to guarantee safety.
- Spot improvements along Westlake Ave will address immediate safety and visibility concerns.

☑ **“Improve traffic flows and minimize traffic congestion”**

- Improved traffic striping and other traffic calming features will enhance safety for pedestrians and motorists.

☑ **“Install and improve directional signage and mile markers along the Loop”**

- The City has installed wayfinding signs along the Loop to identify existing routes as part of the first phase of the project. The second phase will address spot improvements and two major construction projects at Fremont and University Bridges. The Final Master Plan will then highlight the challenges and potential solutions for areas around the Loop and clarify the final route's layout.



Initial Planning and Stakeholder Identification

The City reached out to surrounding community organizations, neighborhood groups, and businesses to identify key stakeholders for the project. After meeting with the following groups, Seattle Parks and Recreation and the Seattle Department of Transportation, in conjunction with the Office of the Mayor, convened an eleven member citizen advisory panel that reflected the broad diversity of interests among stakeholders around Lake Union.

Meeting Date	Group
10/07/07	Eastlake Community Council
10/25/07	Center for Wooden Boats
11/6/07	South Lake Union Friends and Neighbors Community Council (SLUFAN)
11/20/07	Fred Hutchinson Cancer Research Center
11/29/07	Argosy
12/12/07	Floating Homes Association, Mallard Cove
12/12/07	Noel Franklin, United Indians of All Tribes
12/20/07	Seattle Design Commission
1/07/08	UW Design Studio
1/16/08	Cascade Neighborhood Center
1/29/08	Floating Homes, Westlake
2/04/08	Lake Union District Council
2/04/08	Feet First
2/07/08	Lake Union Rotary
3/11/08	South Lake Union Chamber of Commerce
3/20/08	Adobe
3/25/08	Eastlake Community Club
4/01/08	Cascade Bike Club

Citizen Advisory Group

The advisory group met four times during the master planning process, providing comprehensive feedback on design standards, alternatives and proposed plans for the Loop. Members of the group include representatives from the Eastlake Community Council; the Fremont Neighborhood Council; the Wallingford Community Council; the South Lake Union Friends and Neighbors Community Council (SLUFAN); and representatives from the Floating Homes Association; the Mallard Cove Home Owners Association; and a marine business representative. Additionally, the panel includes a representative from both of the City's Pedestrian and Bicycle Advisory Boards.

Advisory Group Meetings & Milestones

Meeting #1, 5/07/08 – The committee established the framework for a set of guiding principles to help shape the design standards and outcome of the Master Plan.

Meeting #2, 6/10/2008 – The project team asked for feedback on design standards and engaged the committee in a discussion of key priorities and challenges.

Meeting #3, 9/04/08 – Lead Architect, Terry Reckord requested comments from the group on design alternatives for eight key segments around the Loop.

Meeting #4, 12/04/08 – Committee members provided a final round of input on recommended solutions, route alignment and new design elements to be incorporated in the Master Plan.

Public Open Houses

In addition to the Advisory Committee meetings, the City held three public open houses to share plans for the Loop with the community and gain public feedback. Public open houses were advertised on the City's website, city maintained-listserves and local neighborhood publications.

The first open house held June 17, 2008 served to share early information about the proposed Master Plan. Community members were invited to meet city staff members, and the city's consultant team; learn about proposed plans for the Loop and share observations with the design team. After gathering initial feedback and ideas, the design team further solidified the route alignment and design elements. A second public open house held September 11, 2008, sought input from the public on eight key segments around the lake and corresponding design alternatives. Comments collected were used to help narrow the design alternatives and select recommended solutions to be incorporated in the draft Master Plan. The project team held its third and final open house December 11, 2008 to present design recommendations and gain one last round of feedback before finalizing the Master Plan.

At each open house, a brief presentation was held to share background information, explain the master planning process and highlight the opportunities to submit comments. Stations with display boards featured design elements and details on a proposed wayfinding system. Project team members were available for discussion and attendees were encouraged to speak directly with staff regarding specific issues and concerns. Citizens were also invited to submit comment forms, email messages, or note their preference directly on the boards.

Presentations

To supplement the public involvement efforts, the design team held three presentations before the Seattle Design Commission and three before the Park Board of Commissioners. Both groups were supportive of the Master Plan and offered further guidance for continued refinement of the plan.

Summary of Public Comment

Overall, public comments have been positive and have largely mirrored the project's guiding principles. However, concerns have been raised over the timing of the signage installation, the cable ferry option and the route alignment between East Hamlin and Louisa Streets. Seven key themes have emerged from public comments. These include concerns or comments about:

- Respecting and maintaining neighborhood character
- Improving safety and mobility
- Balancing public and private access
- Ensuring that final design elements promote direct access and connectivity with existing routes and resources surrounding the neighborhood
- Minimizing parking space losses in the final Master Plan

Number of Comments:

- 112 people attended Open House #1, 6/17/08
- 29 comment forms were received.
- 71 people attended Open House #2, 9/11/08
- 7 comment forms were received.
- 47 people attended Open House #3, 12/11/08
- 13 comment forms were received.
- 50 emails were received as of 12/17/2008

Comment Sources: Open Houses 1-3, Advisory Committee Meetings 1-4, Westlake Houseboat Resident Meeting, 1/29/08, Floating Homes Association Meeting, 12/12/07, Lake Union District Council Meeting, 2/4/08, continuous emails from residents around Lake Union and interested citizens throughout Seattle.

Key Themes	Date Received	Source
Neighborhood Character		
Respect, keep and enhance the character of the neighborhoods adjacent to Lake Union and the proposed loop route.	6/17/08	Open House #1
Mallard Cove residents are particularly concerned about property damage, privacy, noise, public safety and traffic congestion along the Loop.	5/07/08	Advisory Committee Meeting #1
The Floating Homes Association wants to see an enhancement of the lake and is concerned about parking, congestion and noise.	5/07/08	Advisory Committee Meeting #1
Several comments indicated a desire to maintain the charm and character of the community.	5/07/08, 12/12/07	Advisory Committee Meeting #1, Floating Homes Assoc. Meeting
Preserve what exists right now – working lake, maritime waterfront and existing businesses.	12/12/07	Floating Homes Assoc. Meeting
Emphasize the lake as a neighborhood and community.	12/12/07	Floating Homes Assoc. Meeting
Lake Union District Council – Supportive of the Loop, with most interest in preserving neighborhood characteristics, having the route be functional, and being a part of the input process.	2/04/08	Lake Union District Council Meeting
Public/Private Access		
Maintain privacy for houseboat owners. There is high potential that trail users will walk on private-access docks in houseboat communities.	6/17/08	Open House #1
Reawaken the street ends and waterways for public use.	5/07/08	Advisory Committee Meeting #1
It is imperative to connect the Loop at Edgar Street, *along the shoreline*. Although a private land owner has blocked off access, the City should fight to re-open shoreline access. Public property must be defended, and kept for the PUBLIC.	6/19/08	Several emails
You would be running a ferry up and down a channel that would put the ferry in close proximity to our living rooms and bedrooms (feet, not hundreds of yards). This would destroy our privacy and property values.	12/09/08	Email

Design & Connectivity		
Evaluate Green Street Plan, which was developed and submitted by Eastlake Community Council.	6/17/08	Open House #1
The pedestrian and bicycle path should be wide and baby stroller friendly with better landscaping.	6/22/08	Email
Design challenges identified at University Bridge, Gas Works and Mallard Cove.	6/10/08	Advisory Committee Meeting #2
Extend the trail around Portage Bay. Portage Bay is a natural arm of Lake Union and integral to it.	7/28/08	Email
Six most challenging design areas of the Loop: Peace Park/University Bridge; Burke Gillman Trail; Fremont Bridge; Mallard Cove; Fairview Avenue East; and Fairview Avenue North.	6/10/08	Advisory Committee Meeting #2
Desire to maintain vegetation and railroad tracks.	1/29/08	Westlake Houseboat Resident Meeting
The Green Lake path is a good prototype for design, in width and organization of cyclists and pedestrians.	6/22/08	Email
Address trail access along Yale and Roanoke Avenues.	6/10/08	Advisory Committee Meeting #2
There were several requests for the connection of Fairview North and South at Hamlin and Edgar Streets.	6/18/08	Several emails
Fairview Avenue should be reconfigured into a one lane, one way street with the direction of traffic from north to south.	6/22/08	Email
Street maintenance and pothole repairs are much needed.	12/12/07	Floating Homes Assoc. meeting minutes
Questions about alignment of trail under Fremont Bridge.	1/29/08	Westlake Houseboat Resident Meeting
A "light-touch" trail is good but a "heavy-handed" trail would be "devastating."	12/12/07	Floating Homes Assoc. meeting minutes
The vast majority of your constituency strongly favors safe, direct trail routes that minimize/eliminate unnecessary detours and/or grade changes. Trail routes ought to be obvious and easy to use.	6/23/08	Email
Pedestrian and Bicycle Safety and Mobility		
Increase awareness of trail usage among bicyclists.	5/07/08	Advisory Committee Meeting #1
Include a trail at lake level across Roanoke Bay (possibly on a floating dock-type connection) for bicyclists.	6/17/08	Email
Address bicycle safety along Westlake.	6/19/08	Email
1. On east side of the lake it is not apparent there are steps until you are near them – this is dangerous for cyclists. I strongly recommend warning signs here. 2. There is a streetcar stop on the route and the sign is hanging down from the shelter—a cyclist could hit this.	8/24/08	Email
Build a dedicated walking path along Fairview Avenue East between Roanoke and Fairview Avenue North.	6/12/08	Email
Interest in the quality of the pedestrian experience in terms of connectivity and signage.	5/07/08	Advisory Committee Meeting #1
Concern that pedestrians and drivers will have to compete for right of way along Fairview.	1/29/08	Westlake Houseboat Resident Meeting
There are currently numerous areas where pedestrians are forced into the street because of poor connectivity along the trail.	6/06/08	Email
The Green Lake path is a good prototype for design, in width and organization of cyclists and pedestrians.	6/22/08	Email

Address trail access along Yale and Roanoke Avenues.	6/10/08	Advisory Committee Meeting #2
There were several requests for the connection of Fairview North and South at Hamlin and Edgar Streets.	6/18/08	Several emails
Fairview Avenue should be reconfigured into a one lane, one way street with the direction of traffic from north to south.	6/22/08	Email
Fairview Avenue East to Roanoke and Lynn Streets is very congested: There are many pedestrians, and bicycles and cars travel too fast along this segment. Provide additional signage to remind bicyclists and drivers that it is a pedestrian-heavy area.	6/17/08	Open House #1
Residential area at Edgar Street and Yale Ave East: There are 17 cars using a parking area that backs out into the trail. High potential for accidents involving trail users.	6/17/08	Open House #1
Difficult visibility on streets around Eastlake houseboat communities	6/17/08	Open House #1
Address car access to AGC Building on Westlake Avenue and Highland Drive.	6/17/08	Open House #1
Area outside of Diamond Marina on Westlake Avenue North is very busy; be careful to maintain signage to remind drivers of pedestrian/ bicycle presence.	6/17/08	Open House #1
Many people bike to work along Eastlake. A safe, delineated bike route along Fairview might get these people out of the speedy traffic on Eastlake.	6/6/08	Email
Be clear about intentions for loop use for pedestrians and bicyclists, as well as signage for drivers to be aware of loop users.	6/17/08	Email
Speeding cars along Fairview Ave are dangerous to pedestrians and bikers--Change Fairview Ave. to a one lane road.	6/12/08	Email
Implement large speed bumps to calm traffic.		
Include 'traffic calming' strategies that are more refined than 'speed-bumps.' I.e. tire vibrating pavers.	6/18/08	Email
Curves in the street to slow vehicle traffic and add charm are an ideal solution although speed bumps are another option.	6/22/08	Email
Rush hour traffic uses Fairview Avenue as a bypass route so traffic calming on Fairview is a good idea.	12/12/07	Floating Homes Assoc. meeting minutes
Safety concern surround driveway leading to/from Diamond Marina at Westlake (southern limit of path extension project)— frequent problems caused by northbound drivers on Westlake making sudden turns into the driveway, exacerbated by high-speed cyclists heading southbound	1/29/08	Westlake Houseboat Residents Meeting
Improve route and safety along the Fairview south corridor.	06/17/08	Open House #1
Narrow walkway dangerous for all. Make narrow lane a bike lane.	12/11/08	Open House #3
Increase curb radii and trim vegetation at North end of Westlake path to create more pedestrian space.	12/11/08	Open House #3
Due to the new signs I suspect, there are many bicyclists riding on the sidewalk on the trail...near Eastlake Ave E to Westlake Ave. While many of them are considerate of pedestrians and slow down for them, there are also quite a few who race along this sidewalk.	12/16/08	Email
Parking		
Do not take away any current parking spots for residents and business owners. Specifically, comments focused on Fairview Avenue East houseboat owners, Lake Union DryDock company and high-volume visitor areas.	06/17/08	Open House #1
Consider Residential Parking Zone requirement.		Open House #1
Preserving parking along Fairview should be a priority—every space removed will be a hardship.	6/19/08, 7/13/08	Emails

Lake Union Dry Dock Company is concerned parking limitation will be harmful to business.	05/07/08	Advisory Committee Meeting #1
The loss of parking along Fairview would be very unpopular so the trail itself must be such that cars can – with care – drive over it and park in the parking spots that exist now.	6/22/08	Email
Research the benefits of permitted parking along the back-in parking gravel strip that runs along Northlake near the park and beyond. High car theft occurrence in this area and permitting may deter criminal activity.	9/12/08	Email
Wayfinding		
Encourage the use of "mileage markers" along the trail. A lot of people will use the trail for casual walking running, etc, but some (like myself) will use it for training. Having miles (and even 1/2 miles) and kilometers indicated along the trail is very useful. The mileage markers could also be good wayfinding features	6/5/08	Email
Connections to Seattle Center are distressingly poor. We need routing signs to the Center as well as more adequate walking/biking area for passing through the Mercer Tunnel, or even better an alternative, safer route.	6/06/08	Email
Include historic markers along the trail that designate the natural and cultural heritage of the Loop.	06/10/08	Advisory Committee Meeting #2
Consider using the "walking fish" emblem through the Eastlake neighborhood section of the Loop.	6/16/08	Email
Include clear signage.	6/18/08	Email
Including wayfinder signs for strangers is unnecessary; especially since data shows that the main users are local folks.	6/19/08	Email
Include directional map to nearby neighborhoods.	6/10/08	Advisory Committee Meeting #2
Clear and accurate informational signage and maps will encourage users to explore new areas along the trail.	9/12/08	Email
Add "walking fish" emblem to bollards in Eastlake neighborhood.	12/11/08	Open House #3
Incorporate correct pronunciation of Cheshiahud on signage materials.	12/11/08	Open House #3
General Support		
The project promotes the use of non-motorized activities and re-use of existing resources. It will increase walking, safety, property values and decreases crime.	6/18/08	Email
If this trail is done thoughtfully it will be a nice addition to the city.	7/08/08	Email
The Fred Hutchinson Center is really excited about formalizing the trail around Lake Union. Many of our employees are already using this route to walk or run during their lunch hour, and we also have many employees who commute either on foot or on bicycle, and the Loop will improve their experience as well.	6/19/08	Email
Other		
Concerns related to noise, litter, graffiti and potential vandalism along the trail, particularly along areas within close proximity to private property.	6/10/08	Advisory Committee Meeting #2
Historical Interpretation – Extend the trail around Portage Bay to include Cheshiahud's home site on Shelby Street.	7/08/08	Email
Work to preserve historic elements of Lake Union	12/12/07	Floating Homes Assoc. Meeting
The City should hold landowners responsible for their original	6/19/08	Email

permit commitments which require designated view corridors all around the lake.		
I think it is very important that the work this project address gets done now, before the entire perimeter of the Lake is fully developed. In 5 years or more, it will likely be near impossible to reclaim the public right of way.	9/12/08	Email
What will the plan look like and when will it be completed?	7/08/08	Email
Key Segments		
Fairview Avenue		
<ul style="list-style-type: none"> • Advisory Committee <ul style="list-style-type: none"> ○ 1. Fairview Ave at Galer -The committee concluded that the boardwalk (Alt. #2) is optimal for the long-range master plan, but endorsed Alt. 1 as a viable interim solution. Committee members questioned if the boardwalk would be friendly to bikes. Ultimately, using this Alternative, bikers would need to dismount or ride on a parallel path. Committee members acknowledged that Alt. 2 might be safer, but expressed concern about how a boardwalk might interfere with on-going Drydock business. Committee members also cautioned the design team to consider the construction of condos in the area that might increase demand for parking, thereby further complicating the implementation of Alternative #2. ○ Fairview Ave. East – The committee preferred Alt. 1. It appeared It appeared Alt. #2 had too many variables that posed significant problems to committee members. Several members expressed concern for a loss of parking with Alt. 2. There was a request to suppress vehicle traffic with speed bumps and local access only signs. House boat owners put creativity into porches, be careful not to “formalize” them. The local community will prefer the option that doesn’t take away parking. Can traffic be re-routed to another street? The neighborhood plan has designated a “green plan” for this street. • Design <ul style="list-style-type: none"> ○ Consider putting light poles under ground to free up space for parallel parking. ○ Isn’t NOAA abandoning their site soon? Try to secure property for trail use. • Right of Way <ul style="list-style-type: none"> ○ Please research City right of way along Fairview. It is my understanding that most of the street is still public right of way and therefore available for trail development. ○ Does the City controls the ten feet of dirt east of the existing asphalt, if so it could be used for the trail. • Parking - There is a strong desire among residents and business owners to preserve parking on Fairview Avenue. Several 	<p>9/04/08</p> <p>9/4/08</p> <p>9/12/08</p> <p>9/12/08</p> <p>9/12/08</p> <p>9/12/08</p> <p>9/12/08</p>	<p>Advisory Committee Meeting #3</p> <p>Advisory Committee Meeting #3</p> <p>Email</p> <p>Email</p> <p>Email</p> <p>Email</p>

attendees noted that elimination of parking spaces would significantly harm businesses and anger residents.		
<ul style="list-style-type: none"> o Implement vehicle size limits or require parking permits to regulate parking. 	9/12/08	Email
<ul style="list-style-type: none"> o Work with Metro to reclaim parking spaces recently designated for bus parking in an extremely congested area. 	9/12/08	Email
<ul style="list-style-type: none"> o Proposed pedestrian path will eliminate existing parking opposite houseboats. 	9/12/08	Email
<ul style="list-style-type: none"> o There is very limited parking available to non-residents. 	9/12/08	Email
<ul style="list-style-type: none"> o Houseboat owners are concerned about loosing parallel parking spaces. 	9/11/08	Open House #2
<ul style="list-style-type: none"> o Consider parking for trail users and public restroom facilities. 	9/11/08	Open House #2
<ul style="list-style-type: none"> o Major parking issues with banquet facility (safety concern – drunk drivers. 	9/11/08	Open House #2
<ul style="list-style-type: none"> • Pedestrian/Bicyclist Safety - Option 2 requires pedestrians walk behind parked cars creating a potential safety hazard. 		
<ul style="list-style-type: none"> o I am worried about the safety of the proposed striped pedestrian pathway between cars and pedestrians. 	9/05/08	Email (report)
<ul style="list-style-type: none"> o Implementing a crosswalk in proposed site could pose danger from cars speeding off of Eastlake. 		
<ul style="list-style-type: none"> o Several comments suggested making Fairview a one-way street to create space for a separate bike/pedestrian path. 	9/11/08	Open House #2, emails
<ul style="list-style-type: none"> o Building a boardwalk (Option 1) on the slope makes a safer passage- but do not remove any trees. 	9/11/08	Open House #2
<ul style="list-style-type: none"> o Keep speed limit low for kids, families, and pedestrians. 		
<ul style="list-style-type: none"> o Pedestrian/biker safety around Fairview is my biggest concern but beautification elements would be nice too— I love the idea of the boardwalk. 	9/06/08	Email
<ul style="list-style-type: none"> o Street car tracks make it difficult for cyclists to navigate—forced to share pathway with pedestrians. 	9/11/08	Open House #2
<ul style="list-style-type: none"> o The current path is too narrow for safe travel and this is a major bike corridor. 	9/11/08	Open House #2
<ul style="list-style-type: none"> o Suggested solution: Divert bike traffic from Fairview Avenue East to Eastlake Avenue and keeping pedestrian traffic on an improved pedestrian-centric Fairview Avenue East. We propose the creation of a pedestrian-friendly, pedestrian-focused Fairview Avenue East. In doing so it is very important to actually discourage bike use and to direct bike traffic to a safer Eastlake Avenue. 		
<ul style="list-style-type: none"> o Fairview/Eastlake intersection is dangerous for bikers or pedestrians. Gravel path is inadequate because cars park here. 		
<ul style="list-style-type: none"> • Congestion 		
<ul style="list-style-type: none"> o Fairview Ave. E is currently congested with cars, cyclists and pedestrians. 	9/11/08	Open House #2
<ul style="list-style-type: none"> o Advertising this section will bring more people on foot and on bikes. 		
<ul style="list-style-type: none"> • Safety 		
<ul style="list-style-type: none"> o Traffic calming and reduced speeds should be a priority. 	12/11/08	Open House #3
<ul style="list-style-type: none"> o Vary texture of paving and elevations 		

<ul style="list-style-type: none"> ○ Better visibility required at corner of Fairview and Roanoke. ○ On Fairview there are serious deficiencies in paving and drainage. Pedestrians face increased risks in our rainy environment when forced to compete with auto traffic – often speeding and sometimes splashing those trying to share the narrow open passages. ○ Reconfiguring of intersection to enhancing pedestrian and bicycle safety would be good. ○ Regular “flooding” on Fairview Avenue East during rain—limits the space available for pedestrians and bikes. ○ Steep drop off on Fairview north of Fairview Park is dangerous—define edge to increase safety. 		
Mallard Cove		
<ul style="list-style-type: none"> ● Advisory Committee <ul style="list-style-type: none"> ○ With the exception of the Mallard Cove representative, the committee favored a modified Alt. 2. Mallard Cove residents are particularly concerned that their property value may decrease and crime and security may become a more pronounced issue as a result of increased pedestrian traffic through the neighborhood. Both assertions were challenged by project staff, noting research that showed increased property values for homes along trails and marked decreases in crime along trails in residential settings. Other comments included, Eastlake. Committee members viewed it as a steep and dangerous street—unacceptable as a pedestrian path. Alt. 1 will be difficult to permit and invasive on private property. This option should only be included in the Appendix. 	9/04/08	Advisory Committee Meeting #3
<ul style="list-style-type: none"> ● Signage <ul style="list-style-type: none"> ○ Signs have been posted premature. Who is ordering the placement? Official decisions have not been made yet. ○ If no decision has been made why was Option 2 signed as the trail last Saturday? The signage is premature. 	8/13/08 8/13/08	Email Email
<ul style="list-style-type: none"> ● Privacy & Property Damage – There is concern among Mallard Cove neighborhood residents for privacy and property damage issues resulting from Option 2. <ul style="list-style-type: none"> ○ The development of the trail will have a major negative impact on our property. Formal request to remove signs along E. Edgar, E. Yale and E. Roanoke. 	9/11/08	Open House #2
<ul style="list-style-type: none"> ● Option 1: Boardwalk over water. <ul style="list-style-type: none"> ○ Feasibility and regulatory issues will prevent implementation. ○ Why Option 1 is even presented if it cannot be permitted? ○ Would love to see this design. ○ Privacy and boat access issues. ○ Preferred accessible route – flat and doable ○ Very nice – but expensive and problematic. 	9/11/08	Open House #2

<ul style="list-style-type: none"> o Great idea! • Option 1 (Revised): Cable Ferry through Mallard Cove <ul style="list-style-type: none"> o Park and nature recreation should be available to all citizens at the highest extent possible; including those who are disabled...I fully support the proposal of a cable ferry. o Cool idea. • Advisory Committee <ul style="list-style-type: none"> o The committee raised concern for the environmental issues associated with the cable ferry option. The Eastlake Community Council supports an over water alterative but requested further analysis of the cable ferry. The Floating Homes Association opposes any type of over water alternative based on environmental impacts. 	<p>12/11/08</p> <p>12/04/08</p> <p>12/11/08</p>	<p>Open House #3</p> <p>Advisory Committee Meeting #4</p> <p>Open House #3</p>
<p>Safety – Significant safety concerns include potentially hazardous impacts on search and rescue efforts and recreational users.</p> <ul style="list-style-type: none"> o This small waterway is used at night by residents, kayakers, the Harbor Patrol and in an emergency, the City fireboats. The ferry and both docks would need to be clearly lighted at all times, even if not in use, as they would be hazards to navigation in a narrow but active waterway. o How will the ferry and docks be lighted at night? o Would ferry operate only during daylight hours? Night time operation would seem quite hazardous. o Fire boat already has narrow passage and constrained turning ability to reach second row of houseboats in Mallard Cove. This entrance must not be constricted further. o This channel is a small water sports area for residents and the public via the park at the south end. It varies with weather of course, but in addition to residents' boat traffic, it is normal to have lots of kayakers, swimmers, fishermen, and others. How will the ferry not impose safety hazards on these current users of the waterway? 		
<p>Navigability/Access – Several attendees noted the cable's potential to inhibit boat access to the houseboats at Mallard Cove.</p> <ul style="list-style-type: none"> o You could not put an above water cable in place as many boats (including sailboats) use this narrow waterway daily (and nightly). o If a dock or extension of any kind from the shore at the South terminal were added, it would block access to the second and third rows of Mallard Cove houseboats. o Large boats would have difficulty avoiding the cable, even given some amount of warning. o Ferry boats must not impede access to adjacent homes and the waterway entrance to back part of Mallard Cove. o Severe navigation problems with ferry. 	<p>12/11/08</p> <p>12/09/08</p>	<p>Open House #3</p> <p>Email</p>
<p>Environmental – Significant impacts to the lake bottom need to be</p>		

<p>evaluated before further consideration of a cable ferry.</p> <ul style="list-style-type: none"> o An underwater cable is problematic as it could not be on the bottom. Lake Union has a highly-polluted bed that cannot be disturbed, as reflected in the “no anchoring” policy. 	12/11/08	Open House #3
<p>Cost/Feasibility – Attendees also questioned the cost and feasibility of a cable ferry.</p> <ul style="list-style-type: none"> o I was just told that this ferry would not be the main trail route—how can you even think of justifying the cost? o Cable ferry at Roanoke is not a feasible option, it would be inefficient, expensive and it is unnecessary. 	12/09/08	Email
<p>Privacy/Noise – Residents voiced concern for privacy and noise impacts, pointing out the ferry’s close proximity to homes.</p> <ul style="list-style-type: none"> o You would be running a ferry up and down a channel that would put the ferry in close proximity to our living rooms and bedrooms (feet, not hundreds of yards). This would destroy our privacy and property values. o Note that families live in the houseboats that will be mere feet from the ferry. I doubt that the ferries could be made totally silent, and I’m sure the riders would not be. Please be considerate of the residents of this small waterway. o Noise issues associated with the ramp. 	12/11/08 12/09/08	Open House #3 Email
<p>Logistics – Many citizens expressed concern for problematic logistics associated with the ferry.</p> <ul style="list-style-type: none"> o Would it operate during the night? o The ferry would become a tourist attraction, bringing additional cars to an area with limited parking for non-residents. 	9/11/08 9/11/08 9/11/08	Open House #2 Open House #2 Open House #2
<ul style="list-style-type: none"> • Option 2: Use existing or modified path on Yale Terrace, Alley, and Hamlin St. <ul style="list-style-type: none"> o Rather than Yale Terrace bring path up to Eastlake on Edgar. o The “secondary route” option is too steep for strollers, bicycles. o Is there a feasible option connecting down to the waterway on Edgar? o Safety hazard on Southeast corner of E. Edgar and Yale Ave East – blind corners prevent cars from seeing speeding bicyclists and pedestrians. o This stretch is ripe for an accident between car/pedestrian and/or biker. The road is narrow, bikes travel on left and pedestrians walk in the middle of the road. If part of the Loop, it needs traffic calming devices. o Can the City condemn? o Preferred route, used now. o Grade and drainage concerns with route that uses Eastlake rather than alley. 	8/13/08 8/26/08 9/10/08 9/11/08 9/11/08 9/11/08	Email Email Email Open House #2 Open House #2 Open House #2
<ul style="list-style-type: none"> • Option 3: Eastlake as Primary, Roanoke/ Yale Ave / Alley as secondary 		

<ul style="list-style-type: none"> ○ This adds to diversity of experience ○ Are businesses in support of this route? ○ Primary is preferred route, safety and vandalism concerns on secondary route ○ Is owner of apartment building at the foot of Edgar Street willing to negotiate with the City? ○ The City should make an offer to buy his property. ● Edgar Street End <ul style="list-style-type: none"> ○ We need an easement across adjacent property to north – avoid Yale Terrace or Eastlake Ave. Both are dangerous to bikes and walkers. ○ Edgar Street end is a natural wildlife preserve. Leave it alone. ○ Currently no existing stair at Edgar – private property. ○ Short of getting a ferry, use the Edgar right-of-way to reach Fairview. 	12/11/08	Open House #3
University Bridge/Gasworks/Fremont Bridge		
<ul style="list-style-type: none"> ● Advisory Committee <ul style="list-style-type: none"> ○ Peace Park/University Bridge/Gasworks - The committee preferred Alt. 1 developing a separate path along Northlake Way. The existing Burke-Gilman provides an excellent bike path, but does not serve pedestrians well. Bicyclists tend to travel at high speeds in this section of the trail, creating a safety hazard for pedestrians. Pedestrians might deter bicyclists on the Burke-Gilman. The committee also commented that the views of Lake Union are better from the Burke-Gilman Trail although some have been diminished by construction ○ Improve pedestrian connection to new trail, Waterway 15 and John Stanford International School play ground and neighborhood. ○ Opportunities for storm water cleaning/green streets. ○ Gasworks/Fremont Bridge – The committee preferred Alt. 2. Buildings obstruct the view under the bridge. Westlake is a busy, congested street—unsafe as a pedestrian corridor. It is quiet under the bridge and a better option for families. ○ Opportunities for trailside gathering space at public (King County) owned site at west entrance (Northlake and Densmore). ○ Sightlines are limited for bikes at east entrance (Northlake and Meridian). ● Pedestrians/Bicyclists <ul style="list-style-type: none"> ○ Safety improvements for pedestrians are needed at the west end of University Bridge. ○ Northlake is preferred pedestrian route. ○ What about biking in a clockwise direction? ● Other <ul style="list-style-type: none"> ○ Support for enhancement of street ends and waterways ○ Kayak access to Fremont Bridge near Waterway 23 ○ At WW 23 there is public hand launch available at Lake Washington Rowing Club dock, no moorage though 	<p>9/04/08</p> <p>12/11/08</p> <p>9/11/08</p> <p>12/11/08</p> <p>9/11/08</p>	<p>Advisory Committee Meeting #3</p> <p>Open House #3</p> <p>Open House #2</p> <p>Open House #3</p> <p>Open House #2</p>

some perpendicular)		
<ul style="list-style-type: none"> • General Support <ul style="list-style-type: none"> ○ I love the Loop! I love the changes that are happening and the Loop. ○ Any vote would be for improvements that facilitate the biking and walking even in cases where such improvements might eliminate some parking or otherwise make it more Inconvenient for drivers. ○ This project has the potential to enable trail users to more fully enjoy all the street ends, pocket parks, and neighborhoods surrounding Lake Union, and will provide great opportunities for physical activity, environmental stewardship and learning about local history. 	<p>9/12/08</p> <p>9/11/08</p> <p>9/12/08</p>	<p>Email</p> <p>Open House #2</p> <p>Emails</p>
<p>Miscellaneous</p> <ul style="list-style-type: none"> ○ Make entire route ADA accessible. ○ Neighborhood residents would like better notice by mail and better visuals for notices on website. Posting on poles. ○ Fairview/Eastlake junction to NOA is completely inadequate for pedestrians – trail street with garbage and blocked by huge pick-up trucks blocking access. ○ City zoning is antithetical to pedestrian use. ○ Try a bus round-a-bout @ Eastlake @ Fairview (Andy) ○ Don't change SDOT parking planning effort that has evolved. ○ Don't squeeze out water dependent uses (boats/houses) out—don't create too urban/retail environment. ○ East Hamlin road end should be opened to the water to create access and a small park. ○ Increase and maintain shore boat access, consider people traveling by boat from other parts of the city. ○ Partner with local agencies invested in stewardship of shoreline areas to increase support for the Loop. 	<p>9/11/08</p>	<p>Open House</p>

Cheshiahud Lake Union Loop Open House #3 December 11, 2008 Public Comment Summary

Overview

The City of Seattle's Department of Parks and Recreation and Seattle Parks Foundation hosted the third public open house for the Cheshiahud Lake Union Loop to present final design elements and gain public feedback before finalizing the Master Plan. Set to be released in January 2009, the document will propose solutions to specific design challenges around the corridor and recommend future improvements to further enhance the loop.

The Master Plan is an opportunity to recommend further improvements to the existing pedestrian and bicycle routes, creating a seamless and continuous, 6.2 mile loop around Lake Union. The alignment of the loop is based on the existing identified routes. Recommendations for future improvements and design solutions are based on public input received from public open houses, meetings of the project's citizen-based Advisory Committee, and email communication from citizens. The guiding principles developed by the Advisory Committee and the project team shaped the outcome of the master plan planning process.



Member of design team explaining proposed wayfinding system

Public Involvement

The Master Plan process began in early 2008 and included three public open houses and four Advisory Committee meetings. In all, more than 227 people have attended our open houses and 276 people have submitted some form of written comment about the master plan through email or by comment forms provided at open houses.

After gathering feedback at the first open house, the design team further solidified the route alignment and design elements. A second public open house sought input from the public on eight key segments around the lake and corresponding design alternatives. Feedback received at the second open house enabled the design team to select preferred solutions. The third and final public open house then served to present the recommended design solutions and gain public input. This is a summary of the public comments received during the third open house.

Open House #3

The City of Seattle, Parks and Recreation Department hosted the third public open house for the Cheshiahud Lake Union Loop Master Plan on December 11, 2008 from 5:00-7:30pm at the Lake Union Armory. Forty-seven people attended the event and 84 comments were collected through comment forms, feedback written on display boards and email messages received following the open house.

There was a brief presentation at 6 p.m. in which the project team highlighted the final opportunities for public involvement and outlined the master planning process. Terry Reckord, the lead architect for the project, provided an overview of the recommended design alternatives to be included in the Master Plan. Display boards featured background information, the public involvement process, and design elements for featured segments. There was also a display to present revised concepts for a wayfinding system around the loop. Terry encouraged attendees to note their feedback directly on the display boards and address specific questions to project staff in attendance.



Presentation



Comment Form Station



Terry Reckord, Lead Architect Explaining Design Elements

Public Comment

This is an overview of the public comments collected regarding the proposed loop alignment and recommended solutions for design challenges. In general, attendees were supportive of the planned improvements to the loop. Most comments related to the Mallard Cove and Fairview Avenue segments, addressing topics such as safety and accessibility. There was also a lot of feedback on the proposed cable ferry alternative, a relatively new design element.

The following summarizes key themes, categorized by geographic segment around the loop.

Mallard Cove

Public Comments

- **Cable Ferry** – In response to severe regulatory and navigability concerns related to the proposed boardwalk through Mallard Cove, the design team developed a ferry cable alternative. Attendees showed large interest in this new design element and provided a mixed response to the proposed cable ferry option. Proponents of the ferry pointed out accessibility concerns associated with the current route's steep incline and proclaimed the ferry a viable alternative. Those who oppose the ferry addressed the safety, environmental, feasibility, and regulatory concerns associated with this option. Many of the comments also requested additional information and analysis of the cable ferry before its incorporation in the Master Plan.

General Support –

- Park and nature recreation should be available to all citizens...including those who are disabled...unable to walk the steeper inclines. I fully support the proposal of a cable ferry.
- Several attendees shared their support verbally with project staff, calling the cable ferry a cool idea.

Safety – Significant safety concerns include potentially hazardous impacts on search and rescue efforts and recreational users.

- This small waterway is used at night by residents, kayakers, the Harbor Patrol and in an emergency, the City fireboats. The ferry and both docks would need to be clearly lighted at all times, even if not in use, as they would be hazards to navigation in a narrow but active waterway.
- How will the ferry and docks be lighted at night?
- Would ferry operate only during daylight hours? Night time operation would seem quite hazardous.
- Fire boat already has narrow passage and constrained turning ability to reach second row of houseboats in Mallard Cove. This entrance must not be constricted further.
- This channel is a small water sports area for residents and the public via the park at the south end. It varies with weather of course, but in addition to residents' boat traffic, it is normal to have lots of kayakers, swimmers, fishermen, and others. How will the ferry not impose safety hazards on these current users of the waterway?

Navigability/Access – Several attendees noted the cable's potential to inhibit boat access to the houseboats at Mallard Cove.

- You could not put an above water cable in place as many boats (including sailboats) use this narrow waterway daily (and nightly).

- If a dock or extension of any kind from the shore at the South terminal were added, it would block access to the second and third rows of Mallard Cove houseboats.
- Large boats would have difficulty avoiding the cable, even given some amount of warning.
- Ferry boats must not impede access to adjacent homes and the waterway entrance to back part of Mallard Cove.
- Severe navigation problems with ferry.

Environmental – Significant impacts to the lake bottom need to be evaluated before further consideration of a cable ferry.

- An underwater cable is problematic as it could not be on the bottom. Lake Union has a highly-polluted bed that cannot be disturbed, as reflected in the “no anchoring” policy.

Cost/Feasibility – Attendees also questioned the cost and feasibility of a cable ferry.

- I was just told that this ferry would not be the main trail route—how can you even think of justifying the cost?
- Cable ferry at Roanoke is not a feasible option, it would be inefficient, expensive and it is unnecessary.

Privacy/Noise – Residents voiced concern for privacy and noise impacts, pointing out the ferry’s close proximity to homes.

- You would be running a ferry up and down a channel that would put the ferry in close proximity to our living rooms and bedrooms (feet, not hundreds of yards). This would destroy our privacy and property values.
- Note that families live in the houseboats that will be mere feet from the ferry. I doubt that the ferries could be made totally silent, and I’m sure the riders would not be. Please be considerate of the residents of this small waterway.
- Noise issues associated with the ramp.

Logistics – Many citizens expressed concern for problematic logistics associated with the ferry.

- Would it operate during the night?
- The ferry would become a tourist attraction, bringing additional cars to an area with limited parking for non-residents.

• **Edgar Street End** – A few comments inquired about developing the loop connection at the Edgar Street end while others pointed out environmental issues to be considered.

- We need an easement across adjacent property to north –avoid Yale Terrace or Eastlake Ave. Both are dangerous to bikes and walkers.
- Edgar Street end is a natural wildlife preserve. Leave it alone.

- Currently no existing stair at Edgar—private property.
- Short of getting a ferry, use the Edgar right-of-way to reach Fairview. Good idea [says another commenter].

Fairview Avenue

- **Safety** – Numerous comments addressed pedestrian safety and showed strong support for traffic calming techniques.
 - Traffic calming measure would be good, speed limit 10-15 mph max.
 - Traffic calming and reduced speeds should be a priority.
 - Vary texture of paving and elevations
 - Demand rather than consider traffic calming. Make it a priority.
 - Better visibility required at corner of Fairview and Roanoke.
 - On Fairview there are serious deficiencies in paving and drainage. Pedestrians face increased risks in our rainy environment when forced to compete with auto traffic—often speeding and sometimes splashing those trying to share the narrow open passages.
 - Reconfiguring of intersection to enhancing pedestrian and bicycle safety would be good.
 - Regular “flooding” on Fairview Avenue East during rain—limits the space available for pedestrians and bikes.
 - Steep drop off on Fairview north of Fairview Park is dangerous—define edge to increase safety.

Shared Space Street – While most were supportive of the shared street concept, comments indicated a strong preference to preserve parking spaces.

- Caution: do not eliminate any parking, de jure or de facto.
- Provide signs that explicitly say mixed use/pedestrians and vehicles
- Do divert cut-through traffic.
- Separate pedestrians and bicycle lane with planting buffer. The perception is that cars are priority and not people. It is visually unpleasant to have motorists as part of pedestrian/ bike spaces.
- Appropriate surface finish for types of traffic (some parallel, some perpendicular)
- Organize houseboat entries without loss of parking.

Green Street Design – Attendees were supportive of plans to follow Green Street Design standards.

- More natural drainage along Fairview Ave. East would be great, both south and north. No added sidewalks or curbs please! We want natural, green street ambiance. (Did not stay for presentation as a conflict with another meeting)
- Adhere to the Green Street Plan.

Yale Terrace/Roanoke

- **Bicycle and Pedestrian Safety** – Numerous comments called attention to unsafe conditions along Yale Terrace and Roanoke streets.
 - The intersection at Yale and Roanoke should have some control—preferably a stop/yield sign on Yale.
 - Shift signs to go up to Eastlake from Roanoke to Hamlin. Safety issues galore on Yale and the alley.
 - Better visibility required at corner of Fairview and Roanoke.
 - Bicyclists will get killed on Yale Avenue as cars back out of their driveways onto a narrow street. Bikes will zoom down Edgar and turn sharply onto Yale Avenue.
 - Single lane on Yale. Cars have to navigate when one is oncoming Bicyclists come around corner as a car could pull out and into one.
 - Hard to see cars, bikes/etc. coming down Roanoke as we merge from Yale.

Westlake Avenue

- **Safety** – Comments indicated unsafe walking and biking conditions and concern for poor visibility. There was an overwhelming consent to add a lane for bicyclists.
 - Narrow walkway—keep bikes off pathway.
 - Convert truck/service/fire lane to bike lane or sharrow.
 - Use sharrow signage to keep bikes in load/unload lane
 - I second this! This vehicular stop [around 2000 Westlake] is dangerous. I have dodged many cars on the strip. The perception as a pedestrian is that it is dangerous and unsafe. Yes! [from another commenter]
 - Narrow walkway dangerous for all.
 - Make narrow lane a sharrows.
 - Westlake doesn't feel safe to me as a bicyclist.
 - Regarding directing fast bikes to Westlake and Dexter, nobody walking and biking will go up that steep hill just to come back down later on.
 - Yes to enhancing visibility.
 - Increase curb radii and trim vegetation at North end of Westlake path to create more pedestrian space.

Eastlake Avenue East

- **Pedestrian Safety** – A few citizens requested safety improvements on Eastlake Avenue East.
 - Due to the new signs I suspect, there are many bicyclists riding on the sidewalk on the trail...near Eastlake Ave E to Westlake Ave. While many of them are considerate of pedestrians and slow down for them, there are also quite a few who race along this sidewalk.
 - Could the signage be modified to direct bicyclists to the street or parking lots for most of the route?

Miscellaneous

- **Signage** – A few comments suggested incorporation of historic elements in the wayfinding system.
 - Add “walking fish” emblem to bollards in Eastlake neighborhood.
 - Incorporate correct pronunciation of Cheshiahud on signage materials.
- **Peace Park and Burke Gillman Trail**
 - Improve pedestrian connection to new trail, Waterway 15 and John Stanford International School play ground and neighborhood (up 4th Ave NE)
 - Connect lower lake level street ends to sidewalk and streets above Northlake Way
 - Opportunities for storm water cleaning/green streets uphill from Lake.
- **Gasworks Park**
 - Opportunities for trailside gathering space at public (King County) owned site at west entrance (Northlake and Densmore).
 - Sightlines are limited for bikes at east entrance (Northlake and Meridian).



DATE: December 19, 2008
TO: Kristen Loshe, Macleod Reckord
FROM: Michael J. Read, P.E.
Transportation Engineering Northwest, LLC
RE: Cheslahud Lake Union Loop Master Plan –Speed & Cut-Through Traffic
Issues along Fairview Avenue E – **DRAFT FOR CLIENT REVIEW**

This memorandum documents existing speed and cut-through traffic issues in the Fairview Avenue E corridor, along the proposed alignment of the Cheslahud Lake Union Loop Trail in Seattle, WA. During the course of the Master Plan public involvement, a number of neighborhood concerns were expressed of both traffic speeds and cut-through traffic within the Fairview Avenue E corridor. Public comments did not identify a specific location or time of day that these issues were occurring, so TENW developed a comprehensive data collection plan to potentially identify the source of these traffic concerns.

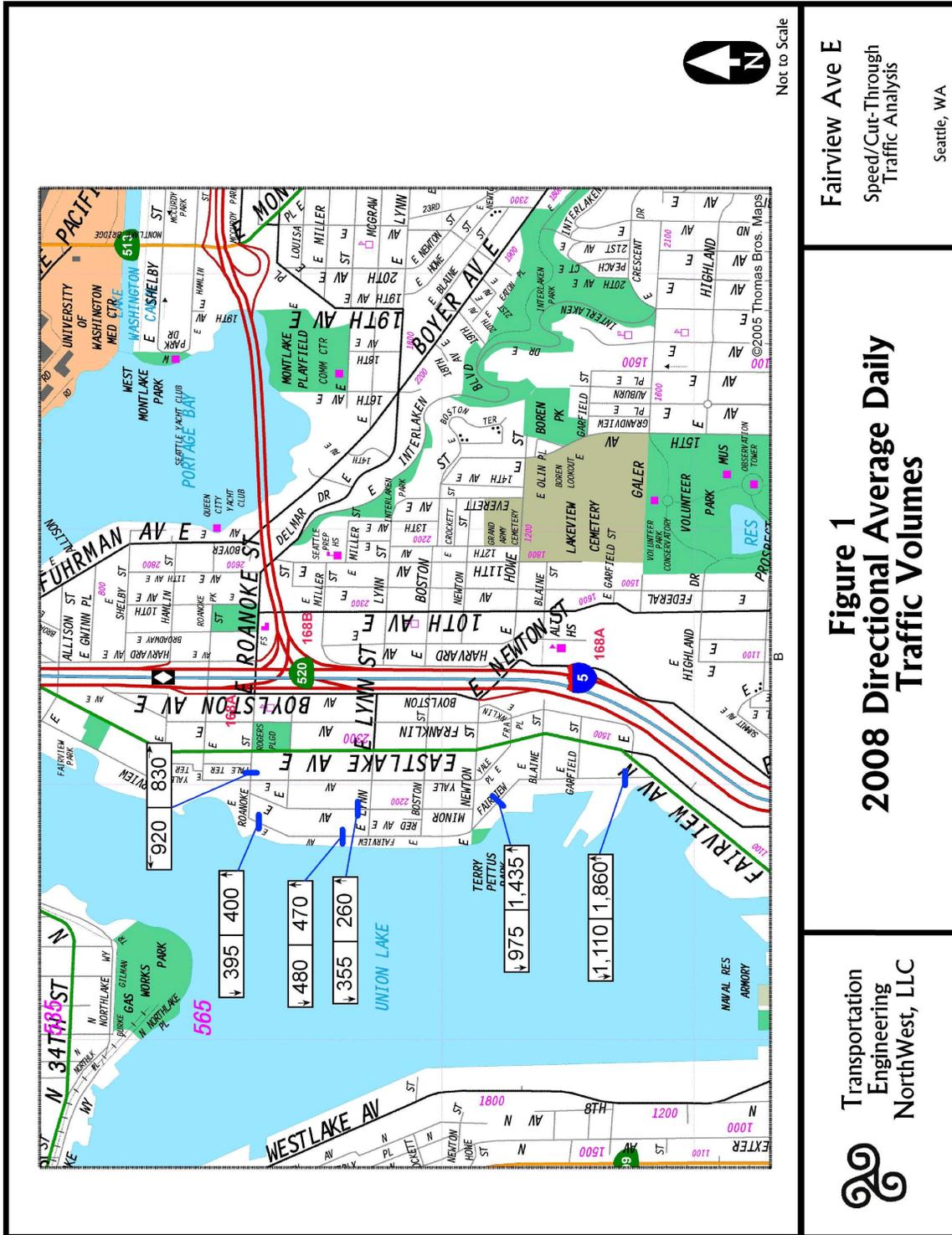
During the first week of December 2008, All Traffic Data performed both directional hourly counts and speed surveys at six different locations along Fairview Avenue E and parallel streets. These detailed counts and speed surveys are provided as **Attachment A**. In general, the study area ranged from Fairview Avenue N/Eastlake Avenue E to E Roanoke Street and collected continuous data during the typical weekdays of Tuesday, Wednesday, and Thursday.

Measured Traffic Speeds

Traffic speeds were collected along Fairview Avenue E south of E Newton Street and north of E Lynn Street. These locations were chosen to identify potential speeding issues in both narrow and wide sections of Fairview Avenue E. North of E Lynn Street the measured 85th-percentile speed was 21 mph, south of E Newton Street the measured 85th-percentile speed was 26 mph. Based on these observations, there appears to be no significant speed issues along the Fairview Avenue E corridor.

Daily Traffic Volumes

Figure 1 summarizes directional average daily traffic (ADT) volumes along various segments of Fairview Avenue, E Roanoke Street, and Minor Avenue E. As shown, north of E Lynn Street within the study area, directional distribution and the overall level of traffic demand do not indicate either cut-through traffic or significant traffic generators that would result in residential traffic management issues.



South of E Lynn Street to Fairview Avenue N however, directional traffic on a daily basis indicates a moderate to high level of cut-through traffic traveling along Fairview Avenue E. This is most likely due to avoidance of congestion or left turn restrictions to residential and commercial uses along Eastlake Avenue E north of Fairview Avenue N. Diversion of between approximately 500 ADT and 750 ADT from the Eastlake Avenue E corridor occurs in the northbound direction. Generally this diversion occurs during both weekday morning and afternoon peak travel periods, however, the trend also occurs outside of peak commute periods.

Conclusions and Recommendations

Given that this traffic diversion is locally generated (i.e., the diversion of traffic does not continue through the more constrained portions of the corridor), and that turning conflicts, congestion levels, and turn restrictions along Eastlake Avenue E are necessary for corridor progression, there are no clear indicators of specific traffic issues. Given that conflicts with general traffic levels and the additional diversionary traffic loads mainly occur on the eastside of the Fairview Avenue E corridor, crossing treatments and alignment of the trail corridor should be placed to minimize conflicts or interaction with the eastside of Fairview Avenue E.

Attachment A

December 2008 Traffic Volume and Speed Counts in
the Fairview Avenue E Neighborhood

NB

Start Time	02-Dec-08 Tue	16:20	21:25	26:30	31:35	36:40	41:45	46:50	51:55	56:60	61:65	66:70	71:75	76:999	Tue Total	85th	
12/02/08	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
02:00	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	21	
03:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
04:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
06:00	4	1	0	1	0	0	0	0	0	0	0	0	0	0	6	17	
07:00	8	4	0	0	0	0	0	0	0	0	0	0	0	0	12	17	
08:00	19	9	6	0	0	0	0	0	0	0	0	0	0	0	34	21	
09:00	15	8	4	0	0	0	0	0	0	0	0	0	0	0	27	20	
10:00	18	6	3	2	0	0	0	0	0	0	0	0	0	0	29	21	
11:00	19	13	2	0	0	0	0	0	0	0	0	0	0	0	34	19	
12 PM	17	13	3	0	0	0	0	0	0	0	0	0	0	0	33	20	
13:00	10	15	6	0	0	0	0	0	0	0	0	0	0	0	31	21	
14:00	25	11	0	0	0	0	0	0	0	0	0	0	0	0	36	18	
15:00	11	18	9	0	0	0	0	0	0	0	0	0	0	0	38	22	
16:00	15	15	6	0	0	0	0	0	0	0	0	0	0	0	36	21	
17:00	21	16	5	0	0	0	0	0	0	0	0	0	0	0	42	20	
18:00	20	21	1	0	0	0	0	0	0	0	0	0	0	0	42	19	
19:00	10	7	3	0	0	0	0	0	0	0	0	0	0	0	20	20	
20:00	5	12	3	0	0	0	0	0	0	0	0	0	0	0	20	20	
21:00	4	6	1	0	0	0	0	0	0	0	0	0	0	0	11	20	
22:00	1	3	0	0	0	0	0	0	0	0	0	0	0	0	4	19	
23:00	1	1	1	0	0	0	0	0	0	0	0	0	0	0	3	21	
Peak Vol.	14:00 25	18:00 21	15:00 9	10:00 2												17:00 42	

Daily

15th Percentile : 5 MPH
 50th Percentile : 16 MPH
 85th Percentile : 20 MPH
 95th Percentile : 24 MPH

Mean Speed(Average) : 14 MPH
 10 MPH Pace Speed : 11-20 MPH
 Number in Pace : 254
 Percent in Pace : 54.9%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

NB

Start Time	03-Dec-08 Wed	16:20	21:25	26:30	31:35	36:40	41:45	46:50	51:55	56:60	61:65	66:70	71:75	76:999	Wed Total	85th
12/03/08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	17
01:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
02:00	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*
04:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*
06:00	2	1	0	1	0	0	0	0	0	0	0	0	0	0	4	26
07:00	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9	12
08:00	11	9	3	0	0	0	0	0	0	0	0	0	0	0	23	20
09:00	15	7	4	0	0	0	0	0	0	0	0	0	0	0	26	20
10:00	12	8	2	0	0	0	0	0	0	0	0	0	0	0	22	19
11:00	10	7	2	0	0	0	0	0	0	0	0	0	0	0	19	19
12 PM	16	11	4	1	0	0	0	0	0	0	0	0	0	0	32	20
13:00	27	12	3	0	0	0	0	0	0	0	0	0	0	0	42	19
14:00	11	10	5	1	0	0	0	0	0	0	0	0	0	0	27	22
15:00	12	7	5	0	0	0	0	0	0	0	0	0	0	0	24	22
16:00	29	15	3	0	0	0	0	0	0	0	0	0	0	0	47	19
17:00	34	15	5	1	0	0	0	0	0	0	0	0	0	0	55	20
18:00	36	18	6	0	0	0	0	0	0	0	0	0	0	0	60	20
19:00	19	9	6	0	0	0	0	0	0	0	0	0	0	0	34	21
20:00	8	5	1	0	0	0	0	0	0	0	0	0	0	0	14	19
21:00	11	8	4	1	0	0	0	0	0	0	0	0	0	0	24	22
22:00	1	5	2	0	0	0	0	0	0	0	0	0	0	0	8	22
23:00	3	1	2	1	0	0	0	0	0	0	0	0	0	0	7	24
Peak Vol.	18:00 36	18:00 18	18:00 6	06:00 1												18:00 60

Daily

- 15th Percentile : 4 MPH
- 50th Percentile : 14 MPH
- 85th Percentile : 20 MPH
- 95th Percentile : 24 MPH

Mean Speed(Average) : 13 MPH

- 10 MPH Pace Speed : 11-20 MPH
- Number in Pace : 239
- Percent in Pace : 49.4%
- Number of Vehicles > 55 MPH : 0
- Percent of Vehicles > 55 MPH : 0.0%

NB

Start Time	04-Dec-08 Thu	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Thu Total	85th
12/04/08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	17
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*
04:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
05:00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	16
06:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
07:00	5	6	1	0	0	0	0	0	0	0	0	0	0	0	12	19
08:00	16	5	1	0	0	0	0	0	0	0	0	0	0	0	22	18
09:00	15	7	2	0	0	0	0	0	0	0	0	0	0	0	24	19
10:00	15	7	1	0	1	0	0	0	0	0	0	0	0	0	24	19
11:00	13	13	6	0	0	0	0	0	0	0	0	0	0	0	32	21
12 PM	23	13	4	1	0	0	0	0	0	0	0	0	0	0	41	20
13:00	8	13	6	0	0	0	0	0	0	0	0	0	0	0	27	22
14:00	8	9	4	0	0	0	0	0	0	0	0	0	0	0	21	21
15:00	23	14	0	1	0	0	0	0	0	0	0	0	0	0	38	19
16:00	14	17	6	0	0	0	0	0	0	0	0	0	0	0	37	21
17:00	23	22	7	0	0	0	0	0	0	0	0	0	0	0	52	20
18:00	9	22	6	2	0	0	0	0	0	0	0	0	0	0	39	22
19:00	12	15	3	0	0	0	0	0	0	0	0	0	0	0	30	20
20:00	13	12	7	1	0	0	0	0	0	0	0	0	0	0	33	22
21:00	4	8	2	0	0	0	0	0	0	0	0	0	0	0	14	20
22:00	3	5	3	0	0	0	0	0	0	0	0	0	0	0	11	22
23:00	3	0	1	0	0	0	0	0	0	0	0	0	0	0	4	21
Peak Vol.	12:00 23	17:00 22	17:00 7	18:00 2	10:00 1										17:00 52	

Daily

15th Percentile : 5 MPH
 50th Percentile : 16 MPH
 85th Percentile : 20 MPH
 95th Percentile : 24 MPH

Mean Speed(Average) : 14 MPH
 10 MPH Pace Speed : 11-20 MPH
 Number in Pace : 260
 Percent in Pace : 55.8%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

Grand Total	709	518	171	14	1	0	0	0	0	0	0	0	0	0	1413
----------------	-----	-----	-----	----	---	---	---	---	---	---	---	---	---	---	------

TOTAL
STATS

15th Percentile : 5 MPH
50th Percentile : 15 MPH
85th Percentile : 20 MPH
95th Percentile : 24 MPH

Mean Speed(Average) : 14 MPH
10 MPH Pace Speed : 11-20 MPH
Number in Pace : 753
Percent in Pace : 53.3%
Number of Vehicles > 55 MPH : 0
Percent of Vehicles > 55 MPH : 0.0%

SB

Start Time	02-Dec-08 Tue	16:20	21:25	26:30	31:35	36:40	41:45	46:50	51:55	56:60	61:65	66:70	71:75	76:999	Tue Total	85th	
12/02/08	2	2	2	1	0	0	0	0	0	0	0	0	0	0	7	24	
01:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	23	
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
05:00	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	21	
06:00	4	9	4	0	0	0	0	0	0	0	0	0	0	0	17	22	
07:00	6	13	8	0	0	0	0	0	0	0	0	0	0	0	27	23	
08:00	18	19	9	2	0	0	0	0	0	0	0	0	0	0	48	22	
09:00	11	17	11	0	0	0	0	0	0	0	0	0	0	0	39	22	
10:00	9	10	3	1	0	0	0	0	0	0	0	0	0	0	23	21	
11:00	11	11	1	1	0	0	0	0	0	0	0	0	0	0	24	20	
12 PM	21	19	6	0	0	0	0	0	0	0	0	0	0	0	46	20	
13:00	13	7	4	1	0	0	0	0	0	0	0	0	0	0	25	21	
14:00	14	16	6	0	0	0	0	0	0	0	0	0	0	0	36	21	
15:00	10	9	5	0	0	0	0	0	0	0	0	0	0	0	24	22	
16:00	13	21	6	0	0	0	0	0	0	0	0	0	0	0	40	20	
17:00	18	11	3	1	0	0	0	0	0	0	0	0	0	0	33	20	
18:00	18	13	1	0	0	0	0	0	0	0	0	0	0	0	32	19	
19:00	12	10	4	0	0	0	0	0	0	0	0	0	0	0	26	20	
20:00	4	9	4	0	0	0	0	0	0	0	0	0	0	0	17	22	
21:00	4	8	1	0	0	0	0	0	0	0	0	0	0	0	13	20	
22:00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	16	
23:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	19	
Peak Vol.	12:00 21	16:00 21	09:00 11	08:00 2												08:00 48	

Daily

15th Percentile : 6 MPH
 50th Percentile : 17 MPH
 85th Percentile : 21 MPH
 95th Percentile : 24 MPH

Mean Speed(Average) : 15 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 290
 Percent in Pace : 59.5%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

SB

Start Time	03-Dec-08 Wed	16:20	21:25	26:30	31:35	36:40	41:45	46:50	51:55	56:60	61:65	66:70	71:75	76:999	Wed Total	85th	
12/03/08	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	18	
01:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	
02:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	17	
05:00	1	3	1	0	0	0	0	0	0	0	0	0	0	0	5	20	
06:00	7	3	1	0	0	0	0	0	0	0	0	0	0	0	11	19	
07:00	11	10	2	0	0	0	0	0	0	0	0	0	0	0	23	20	
08:00	10	12	6	1	0	0	0	0	0	0	0	0	0	0	29	22	
09:00	14	16	2	0	0	0	0	0	0	0	0	0	0	0	32	19	
10:00	15	17	5	0	0	0	0	0	0	0	0	0	0	0	37	20	
11:00	11	12	4	1	0	0	0	0	0	0	0	0	0	0	28	21	
12 PM	13	10	6	0	0	0	0	0	0	0	0	0	0	0	29	21	
13:00	20	17	5	0	0	0	0	0	0	0	0	0	0	0	42	20	
14:00	14	16	6	0	0	0	0	0	0	0	0	0	0	0	36	21	
15:00	10	14	2	0	0	0	0	0	0	0	0	0	0	0	26	20	
16:00	15	14	3	0	0	0	0	0	0	0	0	0	0	0	32	20	
17:00	23	13	3	0	0	0	0	0	0	0	0	0	0	0	39	19	
18:00	24	11	2	0	0	0	0	0	0	0	0	0	0	0	37	19	
19:00	8	11	1	0	0	0	0	0	0	0	0	0	0	0	20	19	
20:00	11	7	3	0	0	0	0	0	0	0	0	0	0	0	21	20	
21:00	9	8	4	0	0	0	0	0	0	0	0	0	0	0	21	21	
22:00	6	2	1	1	0	0	0	0	0	0	0	0	0	0	10	24	
23:00	1	4	2	1	0	0	0	0	0	0	0	0	0	0	8	24	
Peak Vol.	18:00 24	10:00 17	08:00 6	08:00 1												13:00 42	

Daily

15th Percentile : 5 MPH
 50th Percentile : 16 MPH
 85th Percentile : 20 MPH
 95th Percentile : 24 MPH

Mean Speed(Average) : 14 MPH
 10 MPH Pace Speed : 11-20 MPH
 Number in Pace : 278
 Percent in Pace : 56.4%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

SB

Start Time	04-Dec-08 Thu	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Thu Total	85th
12/04/08	1	1	2	0	0	0	0	0	0	0	0	0	0	0	4	23
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	17
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	17
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*
05:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	22
06:00	5	6	3	1	0	0	0	0	0	0	0	0	0	0	15	22
07:00	1	13	6	0	1	0	0	0	0	0	0	0	0	0	21	23
08:00	18	12	5	1	0	0	0	0	0	0	0	0	0	0	36	21
09:00	15	14	8	0	0	0	0	0	0	0	0	0	0	0	37	22
10:00	12	13	5	0	0	0	0	0	0	0	0	0	0	0	30	21
11:00	13	17	5	0	1	0	0	0	0	0	0	0	0	0	36	21
12 PM	17	7	3	0	0	0	0	0	0	0	0	0	0	0	27	19
13:00	16	7	8	1	0	0	0	0	0	0	0	0	0	0	32	23
14:00	9	9	4	0	0	0	0	0	0	0	0	0	0	0	22	21
15:00	10	7	6	1	0	0	0	0	0	0	0	0	0	0	24	23
16:00	11	17	5	0	0	0	0	0	0	0	0	0	0	0	33	20
17:00	16	13	6	1	0	0	0	0	0	0	0	0	0	0	36	21
18:00	17	14	6	0	0	0	0	0	0	0	0	0	0	0	37	21
19:00	14	8	0	1	0	0	0	0	0	0	0	0	0	0	23	19
20:00	6	8	1	1	0	0	0	0	0	0	0	0	0	0	16	20
21:00	2	9	4	0	0	0	0	0	0	0	0	0	0	0	15	22
22:00	7	4	2	1	0	0	0	0	0	0	0	0	0	0	14	22
23:00	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3	26
Peak Vol.	08:00 18	11:00 17	09:00 8	06:00 1	07:00 1										09:00 37	

Daily

15th Percentile : 6 MPH
 50th Percentile : 17 MPH
 85th Percentile : 22 MPH
 95th Percentile : 25 MPH

Mean Speed(Average) : 15 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 263
 Percent in Pace : 56.7%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

Grand Total	607	594	221	20	2	0	0	0	0	0	0	0	0	0	1444
----------------	-----	-----	-----	----	---	---	---	---	---	---	---	---	---	---	------

TOTAL
STATS

15th Percentile : 6 MPH
50th Percentile : 16 MPH
85th Percentile : 21 MPH
95th Percentile : 24 MPH

Mean Speed(Average) : 15 MPH
10 MPH Pace Speed : 16-25 MPH
Number in Pace : 815
Percent in Pace : 56.4%
Number of Vehicles > 55 MPH : 0
Percent of Vehicles > 55 MPH : 0.0%

NB

Start Time	02-Dec-08 Tue	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Tue Total	85th
12/02/08	0	0	3	1	0	0	0	0	0	0	0	0	0	0	4	26
01:00	0	3	0	2	0	0	0	0	0	0	0	0	0	0	5	27
02:00	2	0	0	2	2	0	0	0	0	0	0	0	0	0	6	32
03:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	21
04:00	3	1	1	0	0	0	0	0	0	0	0	0	0	0	5	20
05:00	19	7	11	3	0	0	0	0	0	0	0	0	0	0	40	24
06:00	30	17	17	5	0	0	0	0	0	0	0	0	0	0	69	24
07:00	23	29	37	10	2	0	0	0	0	0	0	0	0	0	101	25
08:00	28	50	38	15	1	0	0	0	0	0	0	0	0	0	132	25
09:00	31	28	28	6	0	0	0	0	0	0	0	0	0	0	93	24
10:00	26	32	34	14	2	0	0	0	0	0	0	0	0	0	108	25
11:00	14	33	24	8	0	0	0	0	0	0	0	0	0	0	79	25
12 PM	22	38	41	10	0	0	0	0	0	0	0	0	0	0	111	25
13:00	33	23	25	10	0	0	0	0	0	0	0	0	0	0	91	25
14:00	20	34	33	8	2	0	0	0	0	0	0	0	0	0	97	25
15:00	15	25	28	10	2	0	0	0	0	0	0	0	0	0	80	25
16:00	8	25	36	10	2	0	0	0	0	0	0	0	0	0	81	25
17:00	15	19	56	17	0	0	0	0	0	0	0	0	0	0	107	26
18:00	22	8	52	24	3	0	0	0	0	0	0	0	0	0	109	28
19:00	8	6	26	14	5	0	0	0	0	0	0	0	0	0	59	29
20:00	3	3	11	7	2	1	0	0	0	0	0	0	0	0	27	29
21:00	1	4	15	13	1	0	0	0	0	0	0	0	0	0	34	29
22:00	3	1	3	6	2	0	0	0	0	0	0	0	0	0	15	30
23:00	1	1	5	1	2	0	0	0	0	0	0	0	0	0	10	31
Peak Vol.	13:00 33	08:00 50	17:00 56	18:00 24	19:00 5	20:00 1									08:00 132	

Daily

15th Percentile : 11 MPH
 50th Percentile : 21 MPH
 85th Percentile : 26 MPH
 95th Percentile : 29 MPH

Mean Speed(Average) : 19 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 913
 Percent in Pace : 62.3%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

NB

Start Time	03-Dec-08 Wed	16:20	21:25	26:30	31:35	36:40	41:45	46:50	51:55	56:60	61:65	66:70	71:75	76:999	Wed Total	85th
12/03/08	1	0	3	3	1	0	0	0	0	0	0	0	0	0	8	30
01:00	0	2	1	1	0	0	0	0	0	0	0	0	0	0	4	26
02:00	2	1	1	1	0	0	0	0	0	0	0	0	0	0	5	25
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	32
04:00	1	1	1	1	1	0	0	0	0	0	0	0	0	0	5	30
05:00	11	9	6	2	0	0	0	0	0	0	0	0	0	0	28	23
06:00	39	25	13	5	0	0	0	0	0	0	0	0	0	0	82	22
07:00	31	31	33	4	0	0	0	0	0	0	0	0	0	0	99	24
08:00	28	39	57	16	1	0	0	0	0	0	0	0	0	0	141	25
09:00	14	41	20	9	0	0	0	0	0	0	0	0	0	0	84	25
10:00	17	24	29	4	1	0	0	0	0	0	0	0	0	0	75	24
11:00	23	30	27	11	0	0	0	0	0	0	0	0	0	0	91	25
12 PM	21	35	25	2	0	0	0	0	0	0	0	0	0	0	83	23
13:00	14	20	30	6	0	1	0	0	0	0	0	0	0	0	71	25
14:00	15	24	20	9	1	0	0	0	0	0	0	0	0	0	69	25
15:00	21	21	41	10	0	0	0	0	0	0	0	0	0	0	93	25
16:00	11	19	43	8	1	0	0	0	0	0	0	0	0	0	82	25
17:00	14	23	48	25	2	0	0	0	0	0	0	0	0	0	112	27
18:00	17	19	57	25	0	0	0	0	0	0	0	0	0	0	118	27
19:00	2	7	26	17	2	1	0	0	0	0	0	0	0	0	55	29
20:00	5	6	21	6	2	0	0	0	0	0	0	0	0	0	40	27
21:00	6	6	20	16	4	0	0	0	0	0	0	0	0	0	52	29
22:00	2	2	4	11	1	0	0	0	0	0	0	0	0	0	20	29
23:00	1	0	6	6	2	0	0	0	0	0	0	0	0	0	15	30
Peak Vol.	06:00 39	09:00 41	08:00 57	17:00 25	21:00 4	13:00 1									08:00 141	

Daily

15th Percentile : 11 MPH
 50th Percentile : 21 MPH
 85th Percentile : 26 MPH
 95th Percentile : 29 MPH

Mean Speed(Average) : 19 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 917
 Percent in Pace : 64.0%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

NB

Start Time	04-Dec-08 Thu	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Thu Total	85th
12/04/08	1	1	4	5	1	0	0	0	0	0	0	0	0	0	12	29
01:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	27
02:00	4	0	1	3	0	0	0	0	0	0	0	0	0	0	8	28
03:00	0	1	1	1	2	0	0	0	0	0	0	0	0	0	5	32
04:00	1	2	3	1	0	0	0	0	0	0	0	0	0	0	7	25
05:00	17	7	5	1	0	0	0	0	0	0	0	0	0	0	30	22
06:00	28	20	14	4	0	0	0	0	0	0	0	0	0	0	66	23
07:00	30	31	31	11	0	0	0	0	0	0	0	0	0	0	103	25
08:00	19	28	42	23	1	0	0	0	0	0	0	0	0	0	113	27
09:00	14	32	30	8	0	0	0	0	0	0	0	0	0	0	84	25
10:00	21	23	23	12	0	0	0	0	0	0	0	0	0	0	79	25
11:00	13	22	24	16	0	0	0	0	0	0	0	0	0	0	75	27
12 PM	17	20	31	8	2	0	0	0	0	0	0	0	0	0	78	25
13:00	14	19	23	21	1	0	0	0	0	0	0	0	0	0	78	28
14:00	18	23	23	14	1	0	0	0	0	0	0	0	0	0	79	26
15:00	10	24	29	14	3	0	0	0	0	0	0	0	0	0	80	27
16:00	13	24	35	12	4	0	0	0	0	0	0	0	0	0	88	27
17:00	24	30	63	22	1	0	0	0	0	0	0	0	0	0	140	26
18:00	7	10	31	19	3	0	0	0	0	0	0	0	0	0	70	28
19:00	9	7	28	12	3	2	0	0	0	0	0	0	0	0	61	29
20:00	6	7	23	15	2	0	0	0	0	0	0	0	0	0	53	28
21:00	3	7	16	16	4	1	0	0	0	0	0	0	0	0	47	30
22:00	2	5	8	18	2	1	0	0	0	0	0	0	0	0	36	30
23:00	1	1	4	3	4	1	0	0	0	0	0	0	0	0	14	33
Peak Vol.	07:00 30	09:00 32	17:00 63	08:00 23	16:00 4	19:00 2									17:00 140	

Daily
 15th Percentile : 12 MPH
 50th Percentile : 21 MPH
 85th Percentile : 27 MPH
 95th Percentile : 30 MPH

 Mean Speed(Average) : 20 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 836
 Percent in Pace : 59.4%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

Grand Total	895	1117	1549	654	82	8	0	0	0	0	0	0	0	0	4305
----------------	-----	------	------	-----	----	---	---	---	---	---	---	---	---	---	------

TOTAL
STATS

15th Percentile : 11 MPH
50th Percentile : 21 MPH
85th Percentile : 26 MPH
95th Percentile : 30 MPH

Mean Speed(Average) : 20 MPH

10 MPH Pace Speed : 16-25 MPH

Number in Pace : 2666

Percent in Pace : 61.9%

Number of Vehicles > 55 MPH : 0

Percent of Vehicles > 55 MPH : 0.0%

SB

Start Time	02-Dec-08 Tue	16:20	21:25	26:30	31:35	36:40	41:45	46:50	51:55	56:60	61:65	66:70	71:75	76:999	Tue Total	85th
12/02/08	0	1	3	1	0	0	0	0	0	0	0	0	0	0	5	25
01:00	1	2	1	1	0	0	0	0	0	0	0	0	0	0	5	25
02:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	31
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*
04:00	0	1	2	0	1	0	0	0	0	0	0	0	0	0	4	31
05:00	5	1	1	3	0	0	0	0	0	0	0	0	0	0	10	27
06:00	7	4	9	2	0	0	0	0	0	0	0	0	0	0	22	24
07:00	8	8	19	8	1	0	0	0	0	0	0	0	0	0	44	27
08:00	13	25	32	9	1	0	0	0	0	0	0	0	0	0	80	25
09:00	15	14	17	6	1	0	0	0	0	0	0	0	0	0	53	25
10:00	19	17	15	3	0	0	0	0	0	0	0	0	0	0	54	24
11:00	13	15	18	6	0	0	0	0	0	0	0	0	0	0	52	25
12 PM	19	14	26	6	0	0	0	0	0	0	0	0	0	0	65	25
13:00	21	23	17	2	0	0	0	0	0	0	0	0	0	0	63	23
14:00	19	33	14	1	0	0	0	0	0	0	0	0	0	0	67	22
15:00	22	18	32	2	0	0	0	0	0	0	0	0	0	0	74	24
16:00	39	35	26	10	0	0	0	0	0	0	0	0	0	0	110	24
17:00	17	30	44	14	0	0	0	0	0	0	0	0	0	0	105	25
18:00	4	14	20	6	0	0	0	0	0	0	0	0	0	0	44	25
19:00	5	5	6	7	2	0	0	0	0	0	0	0	0	0	25	29
20:00	2	2	9	3	1	0	0	0	0	0	0	0	0	0	17	27
21:00	7	2	10	1	0	0	0	0	0	0	0	0	0	0	20	24
22:00	3	0	1	4	0	0	0	0	0	0	0	0	0	0	8	28
23:00	2	2	2	1	0	0	0	0	0	0	0	0	0	0	7	24
Peak Vol.	16:00 39	16:00 35	17:00 44	17:00 14	19:00 2										16:00 110	

Daily
 15th Percentile : 9 MPH
 50th Percentile : 20 MPH
 85th Percentile : 25 MPH
 95th Percentile : 28 MPH

 Mean Speed(Average) : 18 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 590
 Percent in Pace : 63.0%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

SB

Start Time	03-Dec-08 Wed	16:20	21:25	26:30	31:35	36:40	41:45	46:50	51:55	56:60	61:65	66:70	71:75	76:999	Wed Total	85th
12/03/08	2	0	1	1	0	0	0	0	0	0	0	0	0	0	4	26
01:00	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3	26
02:00	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3	26
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*
05:00	2	3	4	4	0	0	0	0	0	0	0	0	0	0	13	27
06:00	4	4	5	3	0	0	0	0	0	0	0	0	0	0	16	26
07:00	3	17	20	2	1	0	0	0	0	0	0	0	0	0	43	25
08:00	17	18	31	6	0	0	0	0	0	0	0	0	0	0	72	25
09:00	15	14	21	7	1	0	0	0	0	0	0	0	0	0	58	25
10:00	15	21	10	3	2	0	0	0	0	0	0	0	0	0	51	24
11:00	16	24	14	4	0	0	0	0	0	0	0	0	0	0	58	24
12 PM	19	29	10	4	0	0	0	0	0	0	0	0	0	0	62	23
13:00	10	23	28	2	2	0	0	0	0	0	0	0	0	0	65	24
14:00	18	23	19	8	1	0	0	0	0	0	0	0	0	0	69	25
15:00	28	39	25	4	0	0	0	0	0	0	0	0	0	0	96	23
16:00	32	21	26	6	0	0	0	0	0	0	0	0	0	0	85	24
17:00	12	30	40	17	1	0	0	0	0	0	0	0	0	0	100	26
18:00	14	14	28	8	2	0	0	0	0	0	0	0	0	0	66	25
19:00	10	8	24	7	0	0	0	0	0	0	0	0	0	0	49	25
20:00	7	2	11	4	0	0	0	0	0	0	0	0	0	0	24	26
21:00	3	2	9	5	0	0	0	0	0	0	0	0	0	0	19	27
22:00	3	1	6	3	1	0	0	0	0	0	0	0	0	0	14	28
23:00	3	0	1	3	1	0	0	0	0	0	0	0	0	0	8	30
Peak Vol.	16:00 32	15:00 39	17:00 40	17:00 17	10:00 2										17:00 100	

Daily

15th Percentile : 10 MPH
 50th Percentile : 20 MPH
 85th Percentile : 25 MPH
 95th Percentile : 29 MPH

Mean Speed(Average) : 19 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 628
 Percent in Pace : 64.2%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

SB

Start Time	04-Dec-08 Thu	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Thu Total	85th
12/04/08	2	1	2	2	0	0	0	0	0	0	0	0	0	0	7	27
01:00	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	26
02:00	0	2	1	0	1	0	0	0	0	0	0	0	0	0	4	31
03:00	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3	23
04:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	22
05:00	8	2	2	1	0	0	0	0	0	0	0	0	0	0	13	22
06:00	8	6	3	3	0	0	0	0	0	0	0	0	0	0	20	25
07:00	11	14	12	8	2	0	0	0	0	0	0	0	0	0	47	27
08:00	11	15	35	15	3	0	0	0	0	0	0	0	0	0	79	27
09:00	20	21	24	9	0	0	0	0	0	0	0	0	0	0	74	25
10:00	10	17	16	1	2	0	0	0	0	0	0	0	0	0	46	24
11:00	17	20	17	4	0	0	0	0	0	0	0	0	0	0	58	24
12 PM	15	17	24	4	0	0	0	0	0	0	0	0	0	0	60	24
13:00	13	18	31	7	1	0	0	0	0	0	0	0	0	0	70	25
14:00	19	24	18	4	0	0	0	0	0	0	0	0	0	0	65	24
15:00	22	24	24	6	1	0	0	0	0	0	0	0	0	0	77	24
16:00	21	19	43	8	0	0	0	0	0	0	0	0	0	0	91	25
17:00	27	31	49	9	0	0	0	0	0	0	0	0	0	0	116	25
18:00	14	17	29	14	1	0	0	0	0	0	0	0	0	0	75	27
19:00	8	5	12	3	1	0	0	0	0	0	0	0	0	0	29	25
20:00	5	5	10	6	2	0	0	0	0	0	0	0	0	0	28	28
21:00	3	3	5	4	1	0	0	0	0	0	0	0	0	0	16	28
22:00	2	2	3	6	1	0	0	0	0	0	0	0	0	0	14	29
23:00	2	2	9	1	1	0	0	0	0	0	0	0	0	0	15	25
Peak Vol.	17:00 27	17:00 31	17:00 49	08:00 15	08:00 3										17:00 116	

Daily

15th Percentile : 10 MPH
 50th Percentile : 20 MPH
 85th Percentile : 25 MPH
 95th Percentile : 29 MPH

Mean Speed(Average) : 19 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 638
 Percent in Pace : 63.2%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

Grand Total	715	825	1031	316	37	0	0	0	0	0	0	0	0	0	2924
----------------	-----	-----	------	-----	----	---	---	---	---	---	---	---	---	---	------

TOTAL
STATS

15th Percentile : 10 MPH
50th Percentile : 20 MPH
85th Percentile : 25 MPH
95th Percentile : 29 MPH

Mean Speed(Average) : 19 MPH

10 MPH Pace Speed : 16-25 MPH

Number in Pace : 1856

Percent in Pace : 63.5%

Number of Vehicles > 55 MPH : 0

Percent of Vehicles > 55 MPH : 0.0%

Start Time	01-Dec-08		02-Dec-08		03-Dec-08		04-Dec-08		05-Dec-08		06-Dec-08		07-Dec-08		Week Average	
	Mon		NB	SB	NB	SB	NB	SB	Fri		Sat		Sun		NB	SB
12:00 AM	*	*	2	0	9	5	4	4	*	*	*	*	*	*	5	3
01:00	*	*	2	2	10	2	11	9	*	*	*	*	*	*	8	4
02:00	*	*	2	0	1	1	5	3	*	*	*	*	*	*	3	1
03:00	*	*	0	3	3	1	2	3	*	*	*	*	*	*	2	2
04:00	*	*	0	2	0	2	2	0	*	*	*	*	*	*	1	1
05:00	*	*	3	4	1	1	2	1	*	*	*	*	*	*	2	2
06:00	*	*	5	11	1	3	4	4	*	*	*	*	*	*	3	6
07:00	*	*	4	23	1	4	1	9	*	*	*	*	*	*	2	12
08:00	*	*	19	37	6	24	0	22	*	*	*	*	*	*	8	28
09:00	*	*	14	19	20	40	4	31	*	*	*	*	*	*	13	30
10:00	*	*	17	23	14	28	10	24	*	*	*	*	*	*	14	25
11:00	*	*	13	20	13	12	10	10	*	*	*	*	*	*	12	14
12:00 PM	*	*	12	18	8	27	7	16	*	*	*	*	*	*	9	20
01:00	*	*	15	26	10	23	0	0	*	*	*	*	*	*	8	16
02:00	*	*	12	20	12	16	13	21	*	*	*	*	*	*	12	19
03:00	*	*	7	7	12	18	16	14	*	*	*	*	*	*	12	13
04:00	*	*	13	21	13	20	22	32	*	*	*	*	*	*	16	24
05:00	*	*	25	34	33	16	29	32	*	*	*	*	*	*	29	27
06:00	*	*	26	16	37	38	17	18	*	*	*	*	*	*	27	24
07:00	*	*	15	16	24	42	24	20	*	*	*	*	*	*	21	26
08:00	*	*	16	16	13	23	20	11	*	*	*	*	*	*	16	17
09:00	*	*	19	21	11	16	8	14	*	*	*	*	*	*	13	17
10:00	*	*	12	13	10	11	17	16	*	*	*	*	*	*	13	13
11:00	*	*	9	10	12	12	3	4	*	*	*	*	*	*	8	9
Total Day	0	0	262	362	274	385	231	318	0	0	0	0	0	0	257	353
	0		624		659		549		0		0		0		610	
AM Peak			08:00	08:00	09:00	09:00	01:00	09:00							10:00	09:00
Vol.			19	37	20	40	11	31						14	30	
PM Peak			18:00	17:00	18:00	19:00	17:00	16:00							17:00	17:00
Vol.			26	34	37	42	29	32						29	27	

Comb. Total	0		624		659		549		0		0		0		610	
ADT	Not Calculated															

All Traffic Data Services Inc.
 2225 NE 27th St
 Renton, WA 98056
 Ph. 206-251-0300

Site Code: 03

E ROANOKE ST E/O YALE AVE E

Start Time	01-Dec-08		02-Dec-08		03-Dec-08		04-Dec-08		05-Dec-08		06-Dec-08		07-Dec-08		Week Average	
	Mon		EB	WB	EB	WB	EB	WB	Fri		Sat		Sun		EB	WB
12:00 AM	*	*	0	3	3	8	4	7	*	*	*	*	*	*	2	6
01:00	*	*	2	1	4	6	5	1	*	*	*	*	*	*	4	3
02:00	*	*	3	5	4	4	1	3	*	*	*	*	*	*	3	4
03:00	*	*	2	1	3	1	1	2	*	*	*	*	*	*	2	1
04:00	*	*	4	0	0	0	1	1	*	*	*	*	*	*	2	0
05:00	*	*	4	2	7	3	6	0	*	*	*	*	*	*	6	2
06:00	*	*	13	15	11	14	10	13	*	*	*	*	*	*	11	14
07:00	*	*	35	47	49	56	50	49	*	*	*	*	*	*	45	51
08:00	*	*	55	83	58	72	56	74	*	*	*	*	*	*	56	76
09:00	*	*	53	57	50	41	51	46	*	*	*	*	*	*	51	48
10:00	*	*	49	42	56	44	56	44	*	*	*	*	*	*	54	43
11:00	*	*	53	44	54	59	65	59	*	*	*	*	*	*	57	54
12:00 PM	*	*	50	65	58	59	39	51	*	*	*	*	*	*	49	58
01:00	*	*	52	47	45	45	54	65	*	*	*	*	*	*	50	52
02:00	*	*	56	65	50	61	59	68	*	*	*	*	*	*	55	65
03:00	*	*	50	60	44	68	52	64	*	*	*	*	*	*	49	64
04:00	*	*	69	70	86	71	62	73	*	*	*	*	*	*	72	71
05:00	*	*	81	59	77	76	81	62	*	*	*	*	*	*	80	66
06:00	*	*	61	71	62	82	59	78	*	*	*	*	*	*	61	77
07:00	*	*	34	52	45	51	37	46	*	*	*	*	*	*	39	50
08:00	*	*	28	42	43	46	36	46	*	*	*	*	*	*	36	45
09:00	*	*	18	33	41	40	23	41	*	*	*	*	*	*	27	38
10:00	*	*	7	16	15	23	20	35	*	*	*	*	*	*	14	25
11:00	*	*	5	7	6	8	4	10	*	*	*	*	*	*	5	8
Total Day	0	0	784	887	871	938	832	938	0	0	0	0	0	0	830	921
	0		1671		1809		1770		0		0		0	1751		
AM Peak			08:00	08:00	08:00	08:00	11:00	08:00							11:00	08:00
Vol.			55	83	58	72	65	74							57	76
PM Peak			17:00	18:00	16:00	18:00	17:00	18:00							17:00	18:00
Vol.			81	71	86	82	81	78							80	77

Comb. Total	0		1671		1809		1770		0		0		0		1751	
ADT	Not Calculated															

All Traffic Data Services Inc.
 2225 NE 27th St
 Renton, WA 98056
 Ph. 206-251-0300

Site Code: 04

FAIRVIEW AVE E S/O E ROANOKE ST

Start Time	01-Dec-08		02-Dec-08		03-Dec-08		04-Dec-08		05-Dec-08		06-Dec-08		07-Dec-08		Week Average	
	Mon		NB	SB	NB	SB	NB	SB	Fri		Sat		Sun		NB	SB
12:00 AM	*	*	28	21	21	24	20	24	*	*	*	*	*	*	23	23
01:00	*	*	22	22	19	26	19	22	*	*	*	*	*	*	20	23
02:00	*	*	25	17	14	26	27	28	*	*	*	*	*	*	22	24
03:00	*	*	35	38	26	30	33	22	*	*	*	*	*	*	31	30
04:00	*	*	29	18	28	32	28	23	*	*	*	*	*	*	28	24
05:00	*	*	27	24	24	29	21	26	*	*	*	*	*	*	24	26
06:00	*	*	31	23	24	32	26	20	*	*	*	*	*	*	27	25
07:00	*	*	31	42	43	33	28	35	*	*	*	*	*	*	34	37
08:00	*	*	35	28	45	30	38	35	*	*	*	*	*	*	39	31
09:00	*	*	32	30	41	41	33	34	*	*	*	*	*	*	35	35
10:00	*	*	21	28	24	17	27	23	*	*	*	*	*	*	24	23
11:00	*	*	18	16	21	17	19	16	*	*	*	*	*	*	19	16
12:00 PM	*	*	6	17	22	22	15	16	*	*	*	*	*	*	14	18
01:00	*	*	4	3	7	13	8	12	*	*	*	*	*	*	6	9
02:00	*	*	2	3	7	4	5	4	*	*	*	*	*	*	5	4
03:00	*	*	1	3	1	5	2	2	*	*	*	*	*	*	1	3
04:00	*	*	0	3	0	1	1	0	*	*	*	*	*	*	0	1
05:00	*	*	5	0	1	0	0	3	*	*	*	*	*	*	2	1
06:00	*	*	1	0	0	0	1	0	*	*	*	*	*	*	1	0
07:00	*	*	1	1	1	2	1	1	*	*	*	*	*	*	1	1
08:00	*	*	1	1	0	0	1	0	*	*	*	*	*	*	1	0
09:00	*	*	4	6	4	8	4	8	*	*	*	*	*	*	4	7
10:00	*	*	9	14	11	9	10	14	*	*	*	*	*	*	10	12
11:00	*	*	27	12	26	24	29	31	*	*	*	*	*	*	27	22
Total Day	0	0	395	370	410	425	396	399	0	0	0	0	0	0	398	395
	0		765		835		795		0		0		0	793		
AM Peak Vol.			03:00	07:00	08:00	09:00	08:00	07:00							08:00	07:00
			35	42	45	41	38	35							39	37
PM Peak Vol.			23:00	12:00	23:00	23:00	23:00	23:00							23:00	23:00
			27	17	26	24	29	31							27	22

Comb. Total	0	765	835	795	0	0	0	793
ADT	Not Calculated							

All Traffic Data Services Inc.
 2225 NE 27th St
 Renton, WA 98056
 Ph. 206-251-0300

Site Code: 05

FAIRVIEW AVE E N/O E LYNN ST

Start Time	01-Dec-08		02-Dec-08		03-Dec-08		04-Dec-08		05-Dec-08		06-Dec-08		07-Dec-08		Week Average	
	Mon		NB	SB	NB	SB	NB	SB	Fri		Sat		Sun		NB	SB
12:00 AM	*	*	1	7	1	2	0	4	*	*	*	*	*	*	1	4
01:00	*	*	0	2	1	2	0	1	*	*	*	*	*	*	0	2
02:00	*	*	2	0	4	2	1	0	*	*	*	*	*	*	2	1
03:00	*	*	1	0	0	0	0	1	*	*	*	*	*	*	0	0
04:00	*	*	1	0	1	1	1	0	*	*	*	*	*	*	1	0
05:00	*	*	0	2	0	5	2	1	*	*	*	*	*	*	1	3
06:00	*	*	6	17	4	11	1	15	*	*	*	*	*	*	4	14
07:00	*	*	12	27	9	23	12	21	*	*	*	*	*	*	11	24
08:00	*	*	34	48	23	29	22	36	*	*	*	*	*	*	26	38
09:00	*	*	27	39	26	32	24	37	*	*	*	*	*	*	26	36
10:00	*	*	29	23	22	37	24	30	*	*	*	*	*	*	25	30
11:00	*	*	34	24	19	28	32	36	*	*	*	*	*	*	28	29
12:00 PM	*	*	33	46	32	29	41	27	*	*	*	*	*	*	35	34
01:00	*	*	31	25	42	42	27	32	*	*	*	*	*	*	33	33
02:00	*	*	36	36	27	36	21	22	*	*	*	*	*	*	28	31
03:00	*	*	38	24	24	26	38	24	*	*	*	*	*	*	33	25
04:00	*	*	36	40	47	32	37	33	*	*	*	*	*	*	40	35
05:00	*	*	42	33	55	39	52	36	*	*	*	*	*	*	50	36
06:00	*	*	42	32	60	37	39	37	*	*	*	*	*	*	47	35
07:00	*	*	20	26	34	20	30	23	*	*	*	*	*	*	28	23
08:00	*	*	20	17	14	21	33	16	*	*	*	*	*	*	22	18
09:00	*	*	11	13	24	21	14	15	*	*	*	*	*	*	16	16
10:00	*	*	4	2	8	10	11	14	*	*	*	*	*	*	8	9
11:00	*	*	3	4	7	8	4	3	*	*	*	*	*	*	5	5
Total Day	0	0	463	487	484	493	466	464	0	0	0	0	0	0	470	481
AM Peak			08:00	08:00	09:00	10:00	11:00	09:00							11:00	08:00
Vol.			34	48	26	37	32	37							28	38
PM Peak			17:00	12:00	18:00	13:00	17:00	18:00							17:00	17:00
Vol.			42	46	60	42	52	37							50	36

Comb. Total	0	950	977	930	0	0	0	951
ADT	Not Calculated							

All Traffic Data Services Inc.
 2225 NE 27th St
 Renton, WA 98056
 Ph. 206-251-0300

Site Code: 06

FAIRVIEW AVE E S/O E NEWTON ST

Start Time	01-Dec-08		02-Dec-08		03-Dec-08		04-Dec-08		05-Dec-08		06-Dec-08		07-Dec-08		Week Average	
	Mon		NB	SB	NB	SB	NB	SB	Fri		Sat		Sun		NB	SB
12:00 AM	*	*	4	5	8	4	12	7	*	*	*	*	*	*	8	5
01:00	*	*	5	5	4	3	1	2	*	*	*	*	*	*	3	3
02:00	*	*	6	2	5	3	8	4	*	*	*	*	*	*	6	3
03:00	*	*	2	0	1	0	5	3	*	*	*	*	*	*	3	1
04:00	*	*	5	4	5	0	7	1	*	*	*	*	*	*	6	2
05:00	*	*	40	10	28	13	30	13	*	*	*	*	*	*	33	12
06:00	*	*	69	22	82	16	66	20	*	*	*	*	*	*	72	19
07:00	*	*	101	44	99	43	103	47	*	*	*	*	*	*	101	45
08:00	*	*	132	80	141	72	113	79	*	*	*	*	*	*	129	77
09:00	*	*	93	53	84	58	84	74	*	*	*	*	*	*	87	62
10:00	*	*	108	54	75	51	79	46	*	*	*	*	*	*	87	50
11:00	*	*	79	52	91	58	75	58	*	*	*	*	*	*	82	56
12:00 PM	*	*	111	65	83	62	78	60	*	*	*	*	*	*	91	62
01:00	*	*	91	63	71	65	78	70	*	*	*	*	*	*	80	66
02:00	*	*	97	67	69	69	79	65	*	*	*	*	*	*	82	67
03:00	*	*	80	74	93	96	80	77	*	*	*	*	*	*	84	82
04:00	*	*	81	110	82	85	88	91	*	*	*	*	*	*	84	95
05:00	*	*	107	105	112	100	140	116	*	*	*	*	*	*	120	107
06:00	*	*	109	44	118	66	70	75	*	*	*	*	*	*	99	62
07:00	*	*	59	25	55	49	61	29	*	*	*	*	*	*	58	34
08:00	*	*	27	17	40	24	53	28	*	*	*	*	*	*	40	23
09:00	*	*	34	20	52	19	47	16	*	*	*	*	*	*	44	18
10:00	*	*	15	8	20	14	36	14	*	*	*	*	*	*	24	12
11:00	*	*	10	7	15	8	14	15	*	*	*	*	*	*	13	10
Total Day	0	0	1465	936	1433	978	1407	1010	0	0	0	0	0	0	1436	973
	0		2401		2411		2417		0		0		0		2409	
AM Peak			08:00	08:00	08:00	08:00	08:00	08:00							08:00	08:00
Vol.			132	80	141	72	113	79							129	77
PM Peak			12:00	16:00	18:00	17:00	17:00	17:00							17:00	17:00
Vol.			111	110	118	100	140	116							120	107

Comb. Total	0		2401		2411		2417		0		0		0		2409	
ADT	Not Calculated															

**Cheshiahud Lake Union Loop
Parks, Waterways and Shoreline Streets Ends Inventory**

NOTE: Open spaces are ordered counter-clockwise around the Loop.

	NAME	Open Space Type	PURVIEW	LOCATION	AREA in acres	EXISTING CONDITIONS AND FEATURES	EXIST. DRAIN. OUTFALL PRESENT	POSSIBLE PROGRAM ELEMENTS, incl. STORM DRAINAGE FEATURES
1	Lake Union Park	Park	Seattle Parks / Seattle Parks Fdn	Valley St. & Terry Ave N	12	Naval Reserve Building, Ctr for Wooden Boats, wharf, waterfront, public park.	See WW2	None - park under phased development.
2	Waterway 4	Waterway	WS DNR	East of Lake Union Park		Center for Wooden Boats.	No	None proposed.
3	Waterway 5	Waterway	WS DNR	Fairview Ave N & Valley St.		Neatly maintained area w. play structure, gravel & paved paths, timber retaining walls, seating, views.	No	None proposed.
4	Waterway 6	Waterway	WS DNR	Fairview Ave. N. near Minor Ave. N		Part of Chandler's Cove development - not designated	Yes	SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
5	Yale Street End	Shoreline Street End	SDOT	Fairview Ave. N		Urban marina feel. Grass, bench, shade trees, dock access, view, bike rack, trash. Big cottonwood is landmark.	Yes	Ivy removal, shoreline restoration/vegetation enhancement on bank. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
6	Fairview Walkway	Waterway	Seattle Parks & SDOT	Fairview Ave. N. and E. Galer Street	0.05	Path at top of bank, bank vegetated w. mix of natives and ornamentals, fence along top of bank, benches facing lake.	No	Signage wayfinding improvements (site is easy to miss), increased landscaped buffer between path and adjacent parking. SD Features: Permeable Paving, shallow drainage
7	Waterway 8	Waterway	WS DNR	West of Zymogenetics / Steam Plant		Floating dock with low benches and ramp; provides hand-carried boat launch	No	None proposed.

NAME	Open Space Type	PURVIEW	LOCATION	AREA in acres	EXISTING CONDITIONS AND FEATURES	EXIST. DRAIN. OUTFALL PRESENT	POSSIBLE PROGRAM ELEMENTS, incl. STORM DRAINAGE FEATURES
8 Waterway 9	Waterway	WS DNR	Fairview Ave. E at Garfield Ave. E street end		Gravel pathway demarcated by curb stops on east (parking adjacent) and old timbers on west; trash receptacle, crude bench, large bigleaf maples, views of Lake Union drydock, Queen Anne. Steep bank with invasive vegetation. Two stairways down steep bank may be private.	Yes (2, including East Blaine Street End)	Ivy removal, shoreline restoration / vegetation enhancement, new benches. Neighborhood proposes to create "Propeller Park," featuring 250' of restored habitat/shoreline, with handicap accessible shoreline path, dock, views. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge, shallow drainage and shared use drainage/ vehicles/ pedestrian path
9 Terry Pettus Park	Park, Shoreline Street End	Seattle Parks & SDOT	Fairview Ave. E & E. Newton street end	0.09	Hand-carry boat launch, shade trees (cherries), shoreline access, public float, fishing, viewpoint	No	Dock and pilings need repair, ivy removal, plantings needs pruning/maintenance. SD Features: Permeable Paving, shallow drainage
10 Boston Street End	Waterway	SDOT	Fairview Ave. E. & E Boston St.		Guardrail at street end, invasive vegetation along steep bank. Fairview is very narrow at this point.	Yes	Enhance pedestrian access, shoreline restoration / vegetation enhancement on bank. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
11 Lynn St Mini Park	Park, Shoreline Street End	Seattle Parks and SDOT	Fairview Ave. E. & E Lynn St.	0.01	Developed in 1970s by Dick Wagner. Picnic table, floating dock, shallow beach, colorful tile work.	No	Ivy removal / vegetation enhancement. SD Features: Permeable Pavements, shallow drainage
12 Louisa Street End	Shoreline Street End	SDOT	Fairview Ave. E. & E Louisa St.		"Eastlake Bouledrome" petanque court. Views, landscaping.	No	SD Features: Permeable Pavements, shallow drainage
13 Roanoke Street Mini-Park	Shoreline Street End	Seattle Parks & SDOT	Fairview Ave. E. & E Roanoke St.	0.25	Developed in 1970s. Two sections on either side of street end. South area: steep beach, benches. North side: view of submerged Fairview Ave. right-of-way. Historic site of Boeing hanger.	No	Ivy removal, shoreline restoration / vegetation enhancement. SD Features: Permeable Pavements, shallow drainage.

NAME	Open Space Type	PURVIEW	LOCATION	AREA in acres	EXISTING CONDITIONS AND FEATURES	EXIST. DRAIN. OUTFALL PRESENT	POSSIBLE PROGRAM ELEMENTS, incl. STORM DRAINAGE FEATURES
14 Edgar Street End	Shoreline Street End	SDOT	Fairview Ave. E & E Edgar St.		Steep bank obscured by blackberries. Anecdotal evidence of stairway to water.	No	Possible point of access to submerged Fairview Ave. right-of-way. View point, shoreline restoration/ vegetation enhancement. SD Features: Permeable Pavements, shallow drainage
15 Hamlin Street End	Shoreline Street End	SDOT? Privately maintained.	Fairview Ave. E & E Hamlin St.		Simple overlook with trees, benches, shallow beach. Hand carry boat launch.	Yes	Ivy removal. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
16 Fairview Park / Waterway 11	Park, Waterway	Seattle Parks, WS DNR	2900 Fairview Ave. E.	0.8	Park is east of Fairview, with p-patch, grass, benches, picnic tables, trees and grass. Stair to Eastlake Ave. E, and upper section of park. Waterside features view, hand-carry boat launch, deck/overlook, gangway, restored shoreline.	No	SD Features: Permeable Pavements
17 Allison Street End	Shoreline Street End	SDOT	Fairview Ave. E & E Allison St.		Used as a parking lot. Views.	Yes	Development may require loss of parking. Overlook, shoreline restoration / vegetation enhancement. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
18 Good Turn Park / Martin Street End	Shoreline Street End	SDOT	Fairview Ave. E & E Martin St.		Developed in 1993. Sizable street end park with gravel paths, native plantings, boulders, benches, picnic table, trash receptacle, sandy shallow beach. Parking along street frontage. Plantings offer privacy, shade, native shoreline feel.	No	A good model for other more sizable street ends and waterways. SD Features: Additional drainage daylighting, permeable pavements

NAME	Open Space Type	PURVIEW	LOCATION	AREA in acres	EXISTING CONDITIONS AND FEATURES	EXIST. DRAIN. OUTFALL PRESENT	POSSIBLE PROGRAM ELEMENTS, incl. STORM DRAINAGE FEATURES
19 South Passage Point Park	Park	Seattle Parks	3320 Fuhrman Ave E. (under south end Ship Canal Bridge)	0.9	Developed in 1973. Waterfront, view, hand-carry boat launch, grass, picnic areas.	No	None proposed.
20 North Passage Point Park	Park	Seattle Parks	600 NE Northlake Way (under north end Ship Canal Bridge)	0.8	Waterfront, views, picnic tables, grass, benches.	Yes	Some vegetation restoration. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
21 Peace Park	Park, Street right-of-way	Seattle Parks	NE Pacific St. and NE 40th St.		Developed in 1998, redeveloped 2008. View, public art/memorial ("Sadako and the Thousand Cranes"), pathway	Yes, directly adjacent	SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
22 Northlake Park	Park	Seattle Parks	699 NE Northlake Way		View, waterfront	No	None proposed.
* 5th Avenue NE Street End	Street right-of-way	SDOT ?	NE Northlake Way and 5th Ave NE street end.		Landscaped area between Chihuly Glass Studio and Ivars Salmon House. Views.	No	None proposed.
23 Waterway 15	Waterway	WS DNR	NE Northlake Way and 4th Ave NE street end.		Developed in 1993 by KC Metro as mitigation. View, benches, decorative paving, benches, shallow sloping beach, public art / historical interpretation.	Yes (2)	SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, shallow drainage, shared use drainage/path, and open channel discharge
* Latona Street End	Shoreline Street End	SDOT	NE Northlake Way and Latona Ave NE street end		Sidewalk at top of bank, otherwise, fully utilities for parking, esp. for adjacent business at 205 NE Northlake Way. Bank covered in blackberries.	Yes	Development may require loss of parking. Overlook, shoreline restoration / vegetation enhancement. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, shallow drainage, shared use drainage/path, and open channel discharge

NAME	Open Space Type	PURVIEW	LOCATION	AREA in acres	EXISTING CONDITIONS AND FEATURES	EXIST. DRAIN. OUTFALL PRESENT	POSSIBLE PROGRAM ELEMENTS, incl. STORM DRAINAGE FEATURES
24 Waterway 16	Waterway	WS DNR	NE Northlake Way and 2nd Ave NE street end		Very wide right-of-way, boatyard driveway access on west side. "Shipwreck" (small decaying boat) at end. Steep bank, lots of invasive vegetation.	No	Possible overlook, shoreline restoration / vegetation enhancement on bank. SD Features: Permeable Pavements
25 Waterway 17	Waterway	WS DNR	NE Northlake Way and Eastern Ave NE street end		Fairly sizable area marked by timbers at water's edge. Flat, with benches, easy water access. Invasive vegetation. Stairway to Burke-Gilman Trail above.	No	Development similar to Good Turn Park, with native vegetation, benches, gravel pathways, etc. SD Features: Permeable Pavements, shallow drainage, and possible daylighting
* Sunnyside Avenue North Street End	Street right-of-way	SDOT	NE Pacific St. and NE Sunnyside Avenue N		Landscaped street median	No	See Sunnyside Boat Ramp.
26 Sunnyside Avenue North Boat Ramp	Waterway	WS DNR	2301 NE Northlake Way	0.54	Motorized boat launch. view, pier. Functional space, minimal aesthetics. Temporary handicap accessible restroom during peak boating season. Renovated 1996.	Yes	SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
27 Waterway 18 / Sea Scouts Park	Waterway	WS DNR	N. Pacific Street between Bagley and Corliss Ave. N street ends		Shady protected cove with shallow beach, trees. Fairly sizable. Private dock for Scouts.	Yes	Development similar to Good Turn Park, with native vegetation, benches, gravel pathways, etc. but more open feel. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, shallow drainage, shared use drainage/path, and open channel discharge
28 Waterway 19	Waterway	Seattle Parks, WS DNR, WSDFW	2119 North Northlake Way		Collaborative public agency venture for shoreline / habitat restoration. Thickly vegetated with narrow pathways.	No	None proposed.

NAME	Open Space Type	PURVIEW	LOCATION	AREA in acres	EXISTING CONDITIONS AND FEATURES	EXIST. DRAIN. OUTFALL PRESENT	POSSIBLE PROGRAM ELEMENTS, incl. STORM DRAINAGE FEATURES
29 Gasworks Park	Park	Seattle Parks	2101 N. Northlake Way	19.1	Old gasworks, shelter, picnic sites, pathways, shoreline access, kite hill, restroom, parking.	No	Extend Cheshiahud Loop through park along old BGT right-of-way. SD Features: Permeable Pavements, and shallow drainage, shared use drainage/path/bicycles
30 Waterway 20	Waterway	WS DNR	1717 N. Northlake Place		Harbor Patrol site, no public access.	Yes	Possible planting enhancement along frontage. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
31 Waterway 21	Waterway	WS DNR	N. Northlake Place at Carr Pl. N		Overlook with benches, planting boxes, view (mostly of shipyard).	No	Upgrade of benches, shoreline restoration / vegetation enhancement. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, shallow drainage, and shared use drainage/path
32 Waterway 22	Waterway	WS DNR	N. Northlake Place at Stone Way N. street end		Guardrail at curve/ street, narrow gravel path invasive vexation along steep bank, great view.	Yes (2)	More aesthetically sensitive barrier from Northlake, shoreline restoration / vegetation enhancement. Investigate creating more of a queuing area in edge of street ROW. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
33 Waterway 23	Waterway	WS DNR	under north end of Aurora Bridge		Grass, benches, vista, public art, paved pathways	Yes	SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge
34 Aurora Street End	Street right-of-way	WSDOT	under south end of Aurora Bridge		Path between rails of old railway, parking for boat trailers, invasive vegetation	Yes	Shoreline restoration / vegetation enhancement, rest area. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge

NAME	Open Space Type	PURVIEW	LOCATION	AREA in acres	EXISTING CONDITIONS AND FEATURES	EXIST. DRAIN. OUTFALL PRESENT	POSSIBLE PROGRAM ELEMENTS, incl. STORM DRAINAGE FEATURES
35 Waterway 1	Waterway	WS DNR	Westlake Ave. N north of McGraw St.		Large open viewpoint along Westlake pathway, views. Separated from adjacent planting by tall thick plantings.	Yes	SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, shallow drainage, shared use drainage/path, and open channel discharge
* Westlake Greenbelt	Park	Parks	Westlake Avenue and Halladay Street	1.36	Greenbelt.	No	See Waterway 1
* McGraw Street End	Shoreline Street End	SDOT	Westlake Ave N. and McGraw St.		Wooden planked overlook, aging wooden railing over water. View of moored boats. Nice plantings block adjacent parking.	No	SD Features: Benches, updated railing to match others along Westlake path, better defined edges north and south. Permeable Pavements, shallow drainage, shared use drainage/path.
36 Crockett Street End	Shoreline Street End	SDOT	Westlake Ave N. and Crockett St.		Overlook / bump out along Westlake pathway, benches, ship's wheel, public art. Adjacent to NW Outdoor Center, no water access.	Yes	SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, shallow drainage, shared use drainage/path, and open channel discharge
* Newton Street End	Street right-of-way	SDOT	Westlake Ave N. and Newton St.		Leftover space feel with chain link fence, invasive vegetation, limited views, poorly situated benches, deteriorating asphalt. Stairway to Dexter across Westlake Ave N.	No	New paving, benches, fences, shoreline restoration / vegetation enhancement. SD Features: Permeable Pavements, shallow drainage, shared use drainage/path.
37 Blaine Street End	Shoreline Street End	SDOT	Westlake Ave N. and Blaine St.		Overlook along Westlake pathway, no water access. Invasive vegetation along bank. Situated between and dock and an alley. Lower scenic qualities.	Yes	Shoreline restoration / vegetation enhancement. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, shallow drainage, shared use drainage/path, and open channel discharge

NAME	Open Space Type	PURVIEW	LOCATION	AREA in acres	EXISTING CONDITIONS AND FEATURES	EXIST. DRAIN. OUTFALL PRESENT	POSSIBLE PROGRAM ELEMENTS, incl. STORM DRAINAGE FEATURES
38 Galer Street End	Shoreline Street End	SDOT	Westlake Ave N. and Galer St.		Near pedestrian bridge / hill climb to Dexter. Steep bank, tall native hedgerow that limits view somewhat. Rustic benches, pedestrian-scale lighting.	Yes	SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, shallow drainage, shared use drainage/path, and open channel discharge
39 Waterway 2	Waterway	WS DNR	Westlake Ave. N. south of Galer Street end, adjacent to Rock Salt Steak House.		Viewpoint from Westlake Ave. path, fence, steep bank, native plantings, public art work.	No	Overlook with seating, shoreline restoration / vegetation enhancement. SD Features: Permeable Pavements, shallow drainage, shared use drainage/path.
40 Waterway 3	Waterway	WS DNR	Valley St. & Westlake Ave. N.		Now part of Lake Union Park. Boat launch, gradual beach.	Yes	Planned salmon habitat restoration as part of Lake Union Park Master Plan. SD Features: Drainage basin cleansing, drainage daylighting, NDS, permeable pavements, and open channel discharge

* These open spaces are either in the Loop or adjacent to it. Some street ends may not be officially designated.

SOURCES:

Seattle Parks website, accessed 8-28-08

"Lake Union Shoreline Points of Interest and Public Access," Friends of Lake Union and Olmsted-Fairview Parks Commission, copyright Chris Leman.

CHESHIAHUD LAKE UNION LOOP MASTER PLAN

APPENDIX: CABLE FERRY DISCUSSION



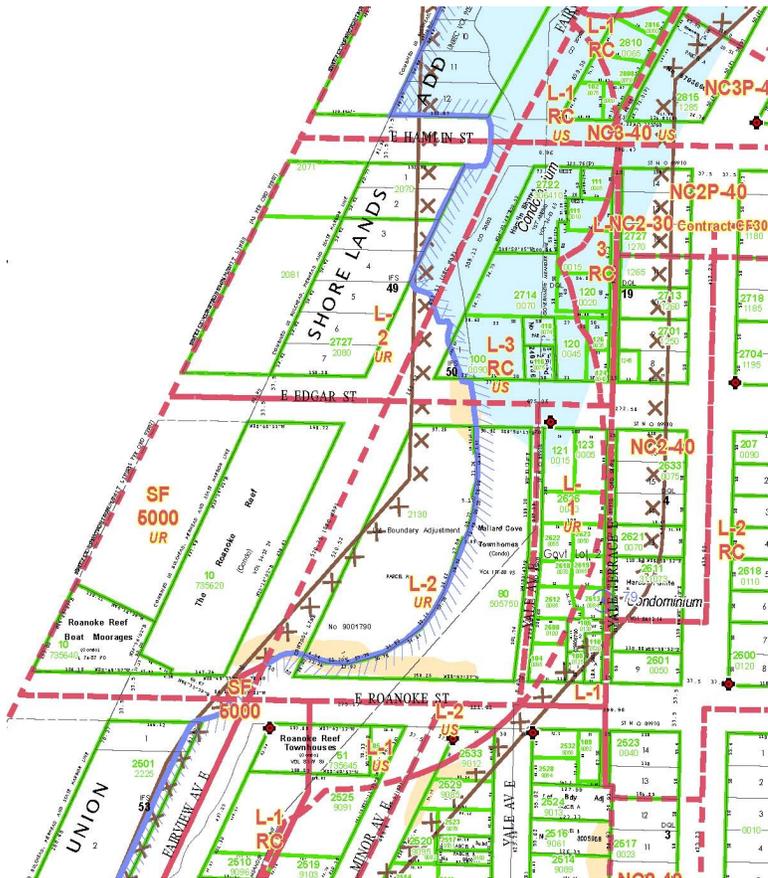
Coin operated cable ferry in Espevær Bomlo, Norway

Mallard Cove Missing Link: Water Crossing

The Cheshiahud Trail alignment heading north, or counter-clockwise, splits into two alignment options at the intersection of East Roanoke Street and Fairview Avenue East. One option is to travel east along East Roanoke Street then North along Yale Avenue East. From Yale Avenue an alleyway with rather steep grades is encountered before connecting up with East Hamlin Street.

The second option involves a water crossing on the Fairview Avenue East right-of-way between the Fairview/East Roanoke intersection to the existing parking area which exists on the Fairview Avenue right of way just North of the East Edgar Street end.

Numerous water crossing solutions were discussed at this crossing, from a boardwalk and drawbridge, floating dock and drawbridge, to a ferry or boat crossing. The first two solutions were eliminated as viable options upon



City GIS map of Mallard Cove

investigation of the crossing and of the navigation issues.

Ferry water crossings have been used for centuries to transport people, goods, and vehicles across rivers and lakes. In the early 1900's cable ferries were invented to transport across rivers as a means to control the docking locations thru river currents. Cable ferries are also ideal for shorter crossings. This system is envisioned for this portion of the Cheshiahud Lake Union Loop as it crosses Lake Union near Mallard Cove. A cable ferry system does not require an operator. It operates with minimal noise compared to engine operation, and it also allows for resident boat traffic to cross its path. A typical small cable ferry system could be described as follows:

Cables

Braided wire cables fixed to each end of the ferry are envisioned.

Spools or winches pull the ferry from dock to dock. During operation the lead cable becomes taught while the trailing cable sags to the bottom of the lake to allow boats to cross behind the ferry. For aesthetics and longevity reasons the winches can be housed beneath the approach docks or in underground vaults.

Power

The winches will likely run on DC power. Solar power may be applicable depending on space availability and hours of operation vs. hours of daylight.

Capacity

The Norway ferry example is limited to under 6 people per trip. To keep the weight down, the capacity for the Cheshiahud ferry may be 10 people or fewer per crossing.

Operation

Coin operation is possible (as is the case with the cited Norway example.)

Crossing Time

The proposed Cheshiahud water crossing is roughly 600-feet. Researching of winches and motors commonly used in marine applications resulted in many products available for pulling speeds of 50 feet per minute. The example ferry in Norway has a top speed of 25 meters per minute. This technology applied to this Cheshiahud stretch results in



Alley connection to East Hamlin St.



UPPER: Northbound view of the water crossing route.

LOWER: Existing condition at landing areas.



UPPER: Details of cable mechanism at Canby, Oregon cable ferry.
 LOWER: Ferry leveler at Canby.

a crossing time of approximately 10 minutes. A variable speed drive is necessary on the motor in order to slow the vessel as it approaches the dock so a smooth docking of the vessel is achieved.

Existing Condition at Landing Areas, Boat Access

On-grade trail approaches are possible up to the waters edge. When not in operation, boat access is possible.

Water Level

The Lake Union water level is typically set at an elevation of 20.6'. This level is controlled at the Ballard Locks. The range of fluctuation is between 20 and 22' elevation. The water depth along this crossing varies. The depth noted at the landings is approximately 16-24 inches.

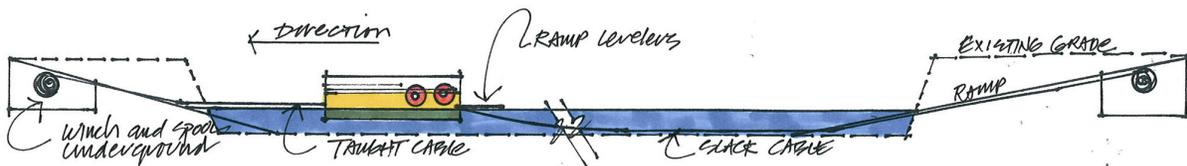
Proposed Landing Area

A dock leveler is anticipated to make up for fluctuations in the Lake Level as well as to allow ADA accessibility. One option is to have a spring loaded ramp extend off each end of the ferry. A similar leveler ramp is utilized in the engine/cable ferry operating in Canby Oregon across the Willamette River.

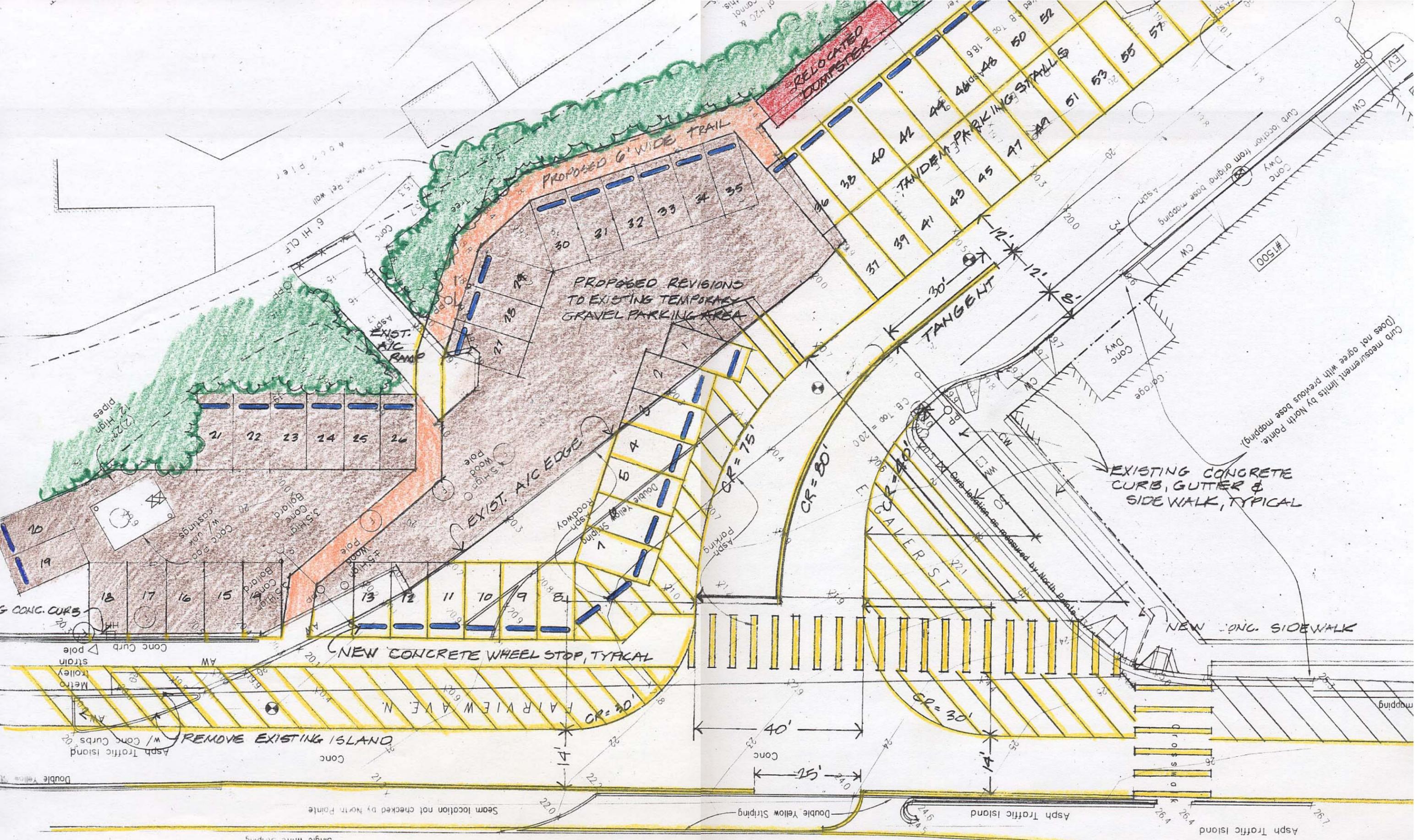
Permitting

In addition to the City permitting effort for the trail the following agencies would likely review the ferry crossing:

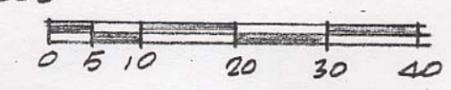
- SDOT permitting of trail approaches
- Shoreline permitting of water elements; cables, attachments, abutments
- Army Corp of Engineers; vessel and operation
- Washington Dept. of Fish and Wildlife; habitat.



Schematic of cable ferry operation.



FEBRUARY 4, 2006
SCALE: 1" = 20'



Single White Striping

Seam location not checked by North Pointe

REMOVE EXISTING ISLAND

Conc

Asph Traffic Island

Asph Traffic Island w/ Conc Curbs

Metro trolley

Conc Curb w/ pole

CONC. CURBS

Conc Egg w/ Jack Castings

12" High Pipes

6" HI. CLF

4" High

Asph

Asph

Asph